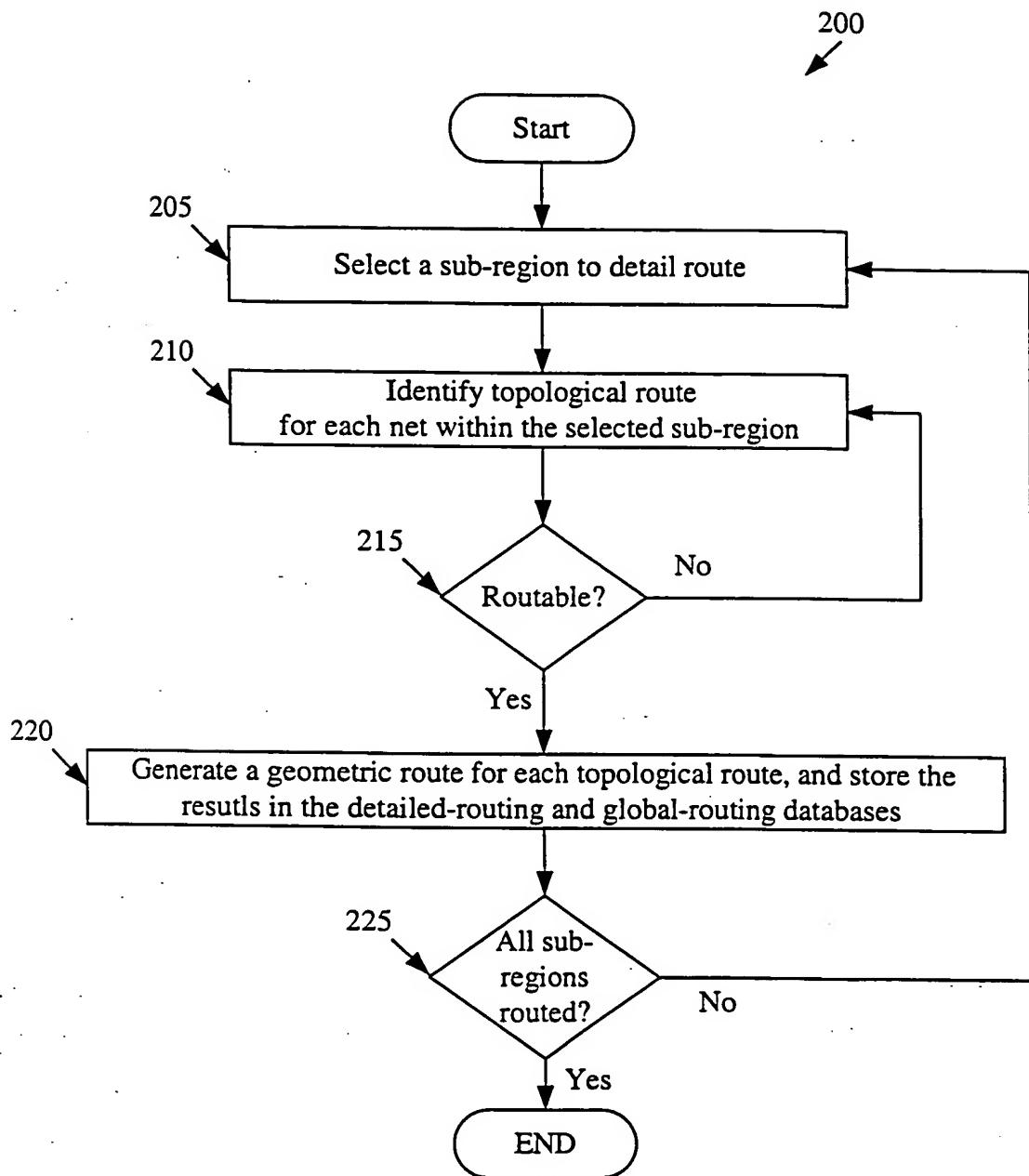
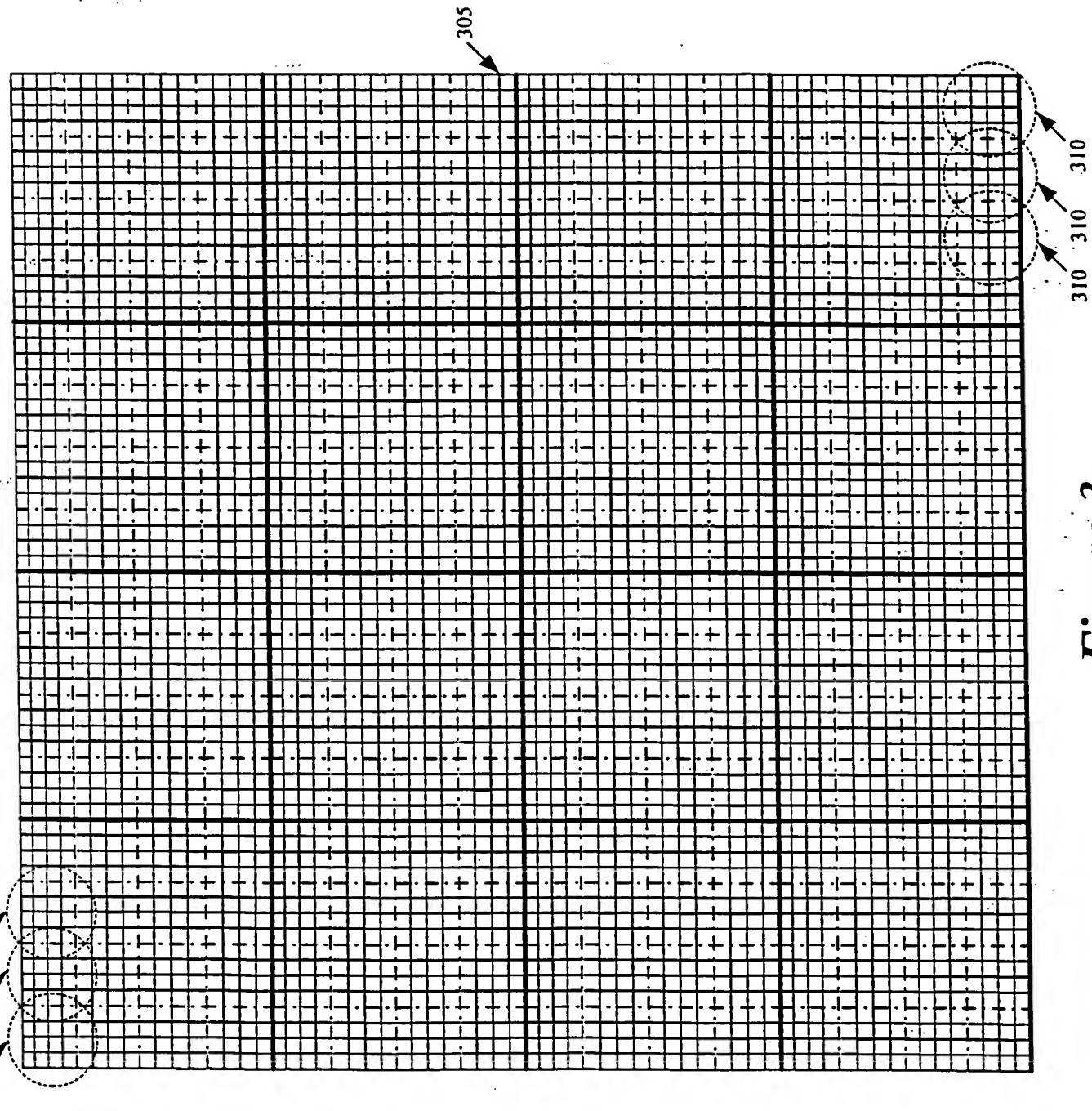


Figure 1



*Figure 2*

2021F20 "WCF3200"



**Figure 3**

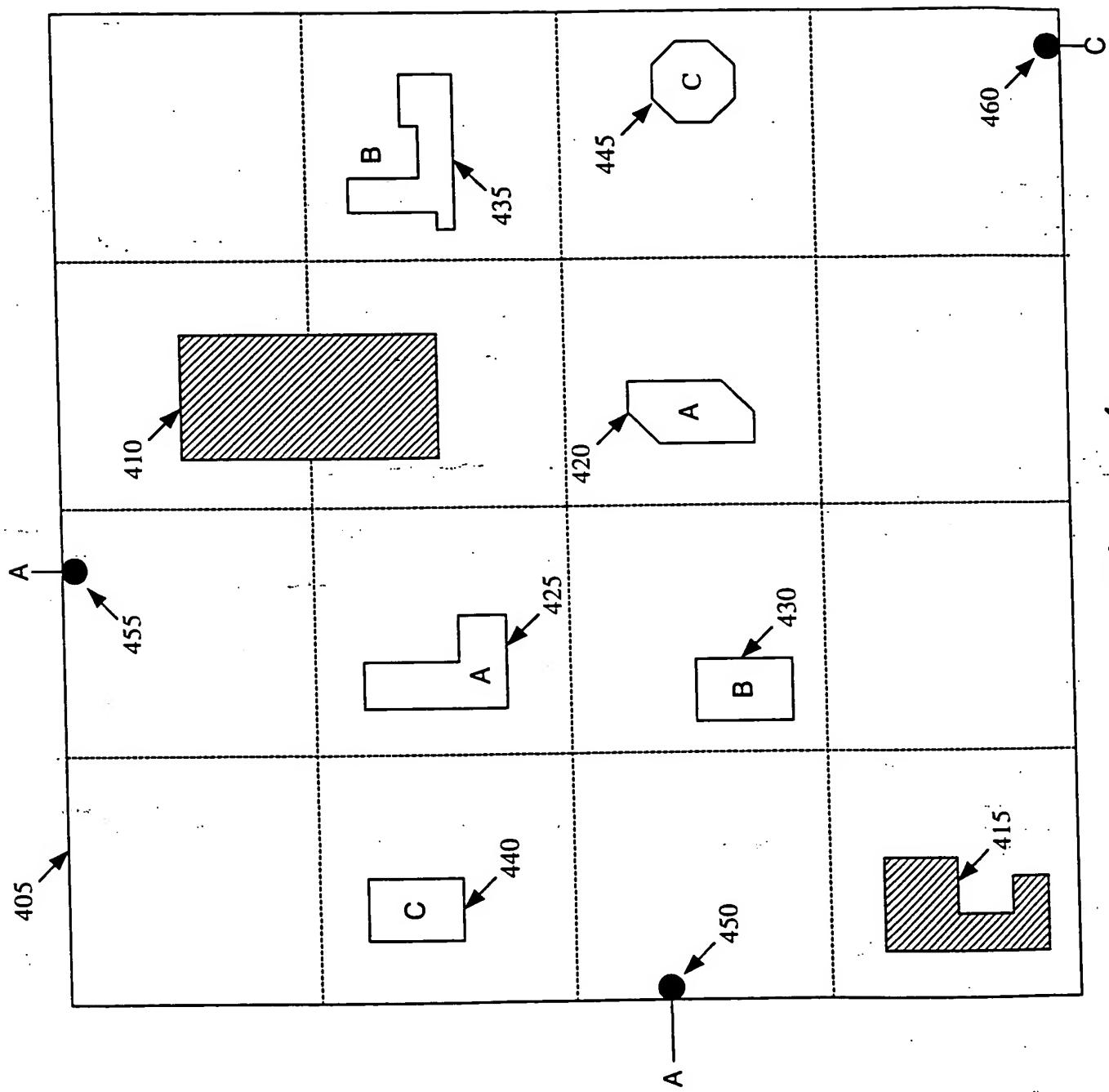
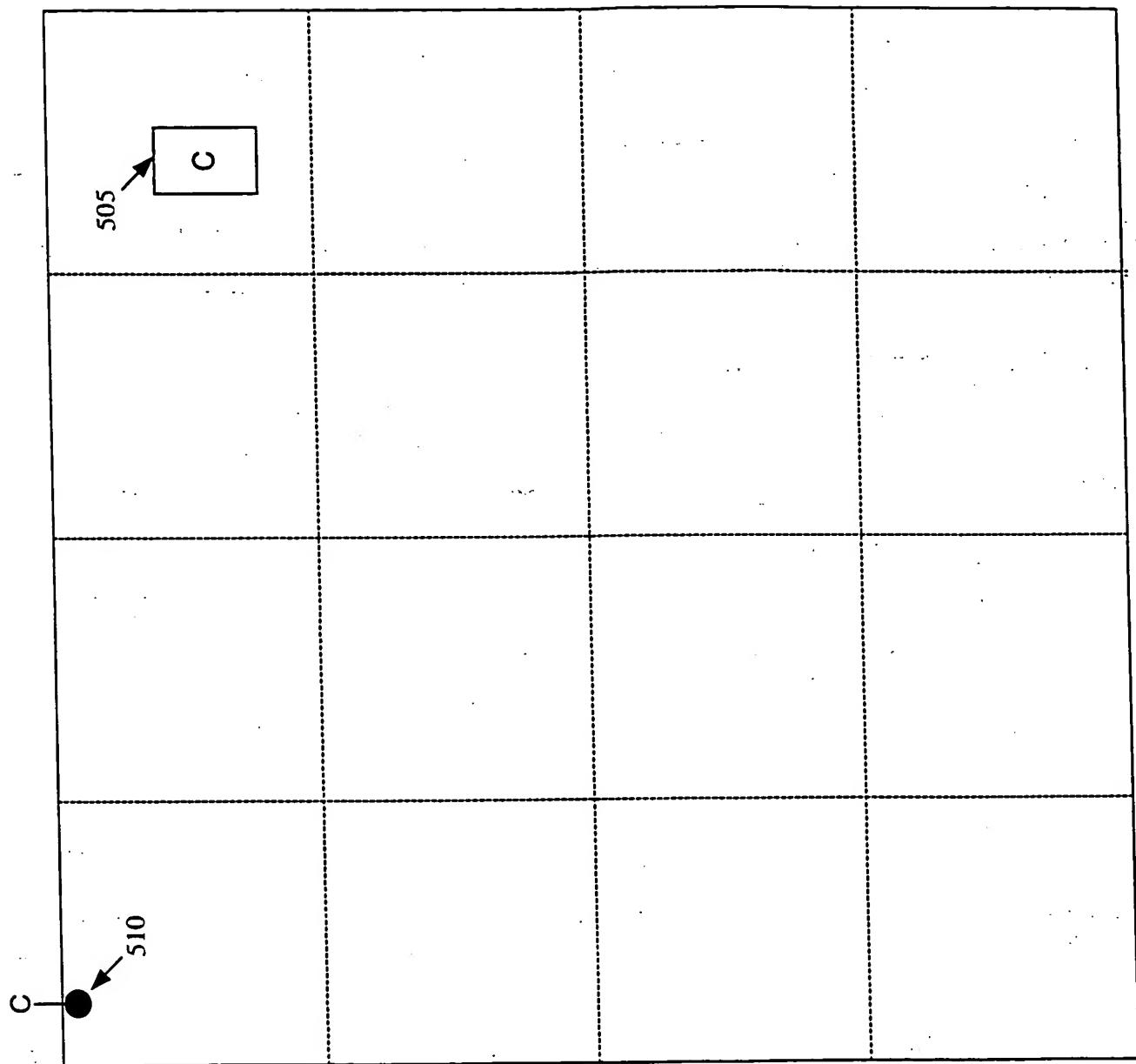


Figure 4

Figure 5



- List of Geometries
  - Each Geometry including a sequence of points & layer assignment
  - Bounding box of the region
  - Array of layer properties
    - Minimum wire size
    - Minimum spacing
    - Via sizes
    - Cost/Unit
  - Netlist specifying a number of nets
    - Each net specifying a set of pins
    - Each pin specifying a set of ports
      - Each port specifying a set of geometries

*Figure 6*

- List of Geometries
  - Each Geometry including a sequence of points & layer assignment
  - List of connection nodes inside each pin geometry
- Bounding box of the region
- Array of layer properties
  - Minimum wire size
  - Minimum spacing
  - Via sizes
  - Cost/Unit
- Netlist specifying a number of nets
  - Each net specifying a set of pins
  - Each pin specifying a set of ports
    - Each port specifying a set of geometries
- For each layer, a graph specifying
  - Nodes
  - Edges
  - Faces

*Figure 7*

<b>Face</b> <ul style="list-style-type: none"> <li>-Reference to 3 edges</li> <li>-Reference to 3 nodes</li> <li>-Up to two references for up to two face item</li> </ul>	<b>Edge</b> <ul style="list-style-type: none"> <li>-Two references for up to two faces of the edge</li> <li>-Capacity</li> <li>-Flow</li> <li>-Constrained</li> <li>-Linked list of items on the edge starting with one of the edge's nodes and ending with its other node</li> </ul>
---	---

*Figure 9*

*Figure 8*

Node
<ul style="list-style-type: none"> <li>-Net Identifier</li> <li>-One or more planar-path references to adjacent topological items in the same planar path</li> <li>-A pair of via-path references to up and down topological via items</li> <li>-A references to list of edges connected to the node</li> <li>-For each edge, an edge reference to the next or previous topological item on the edge</li> <li>-A reference to the geometry of the node</li> <li>-Vertex number identifying the vertex of the geometry</li> <li>-Location of the node</li> </ul>

1000

*Figure 10*

Edge Item
<ul style="list-style-type: none"> <li>-Reference to its edge</li> <li>-Net Identifier</li> <li>-A pair of planar-path references to adjacent topological items in the same planar path</li> <li>-A pair of edge references to the next and previous topological item on the edge</li> </ul>

1100

Face Item
<ul style="list-style-type: none"> <li>-Reference to its face</li> <li>-Net Identifier</li> <li>-Up to 3 planar-path references for adjacent topological items in the same planar path</li> <li>-A pair of via-path references for up and down topological via items</li> <li>-Bounding polygon that defines legal face item locations</li> <li>-Constraining Points and Distances</li> </ul>

1200

*Figure 11*

*Figure 12*

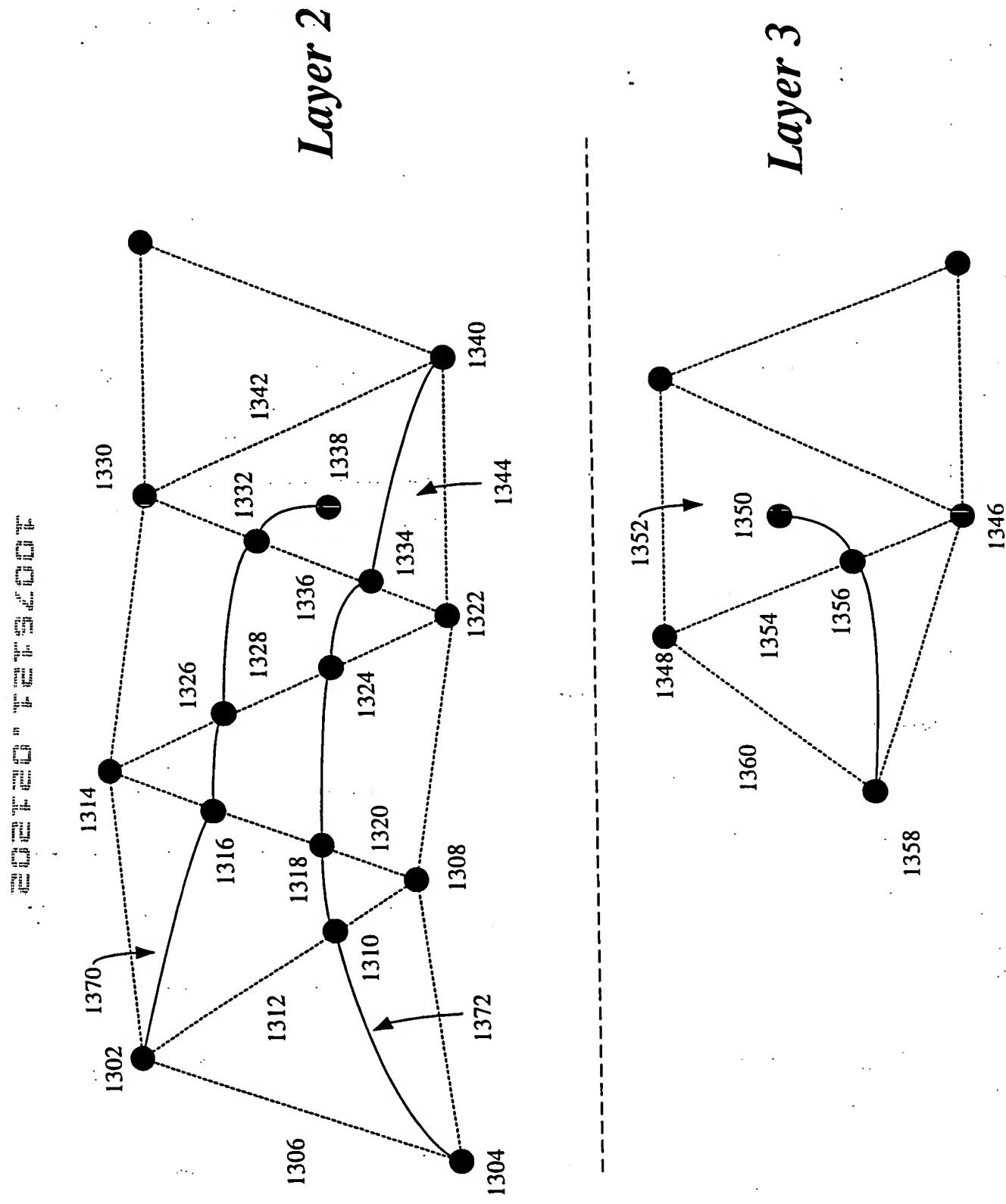
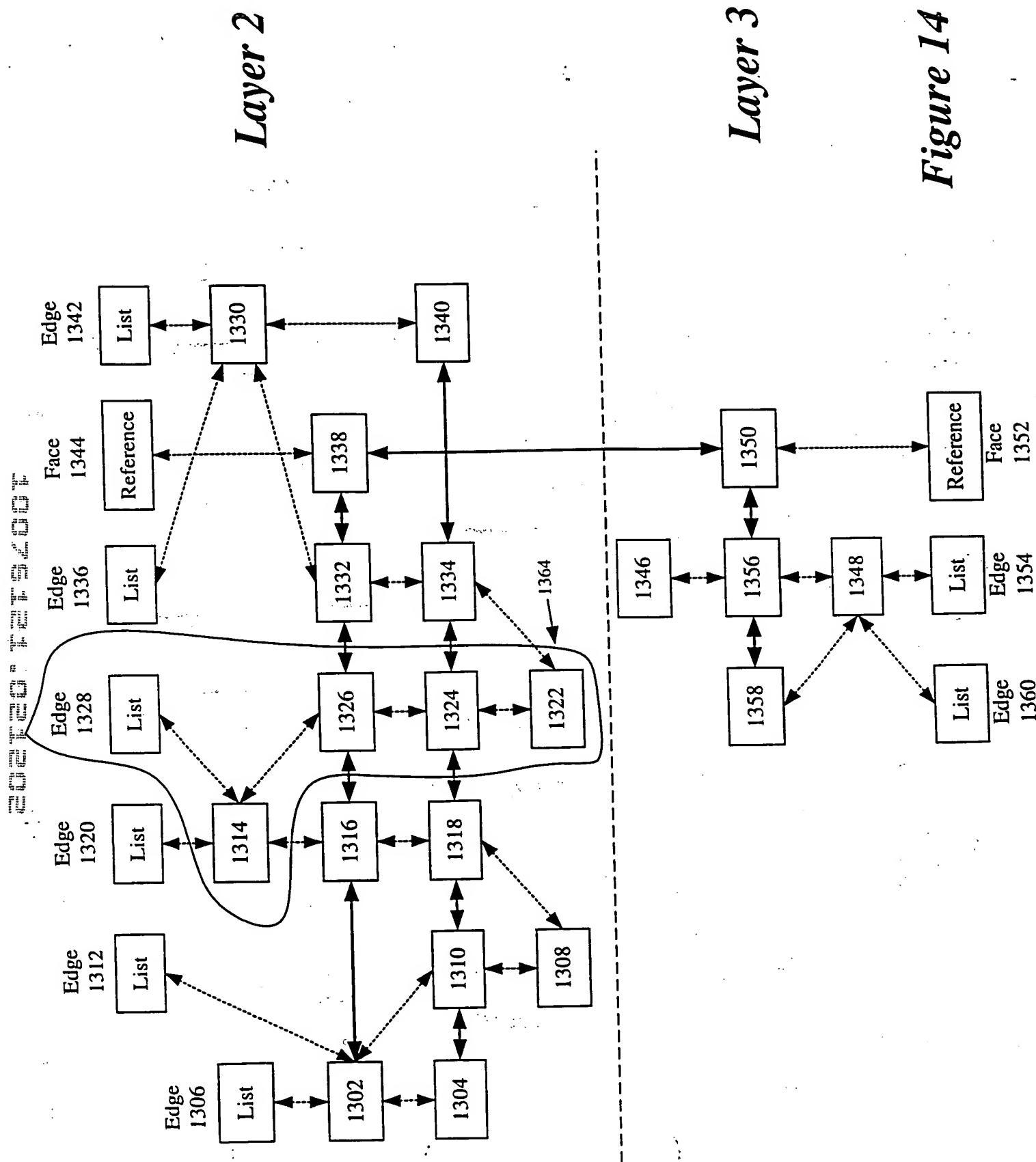
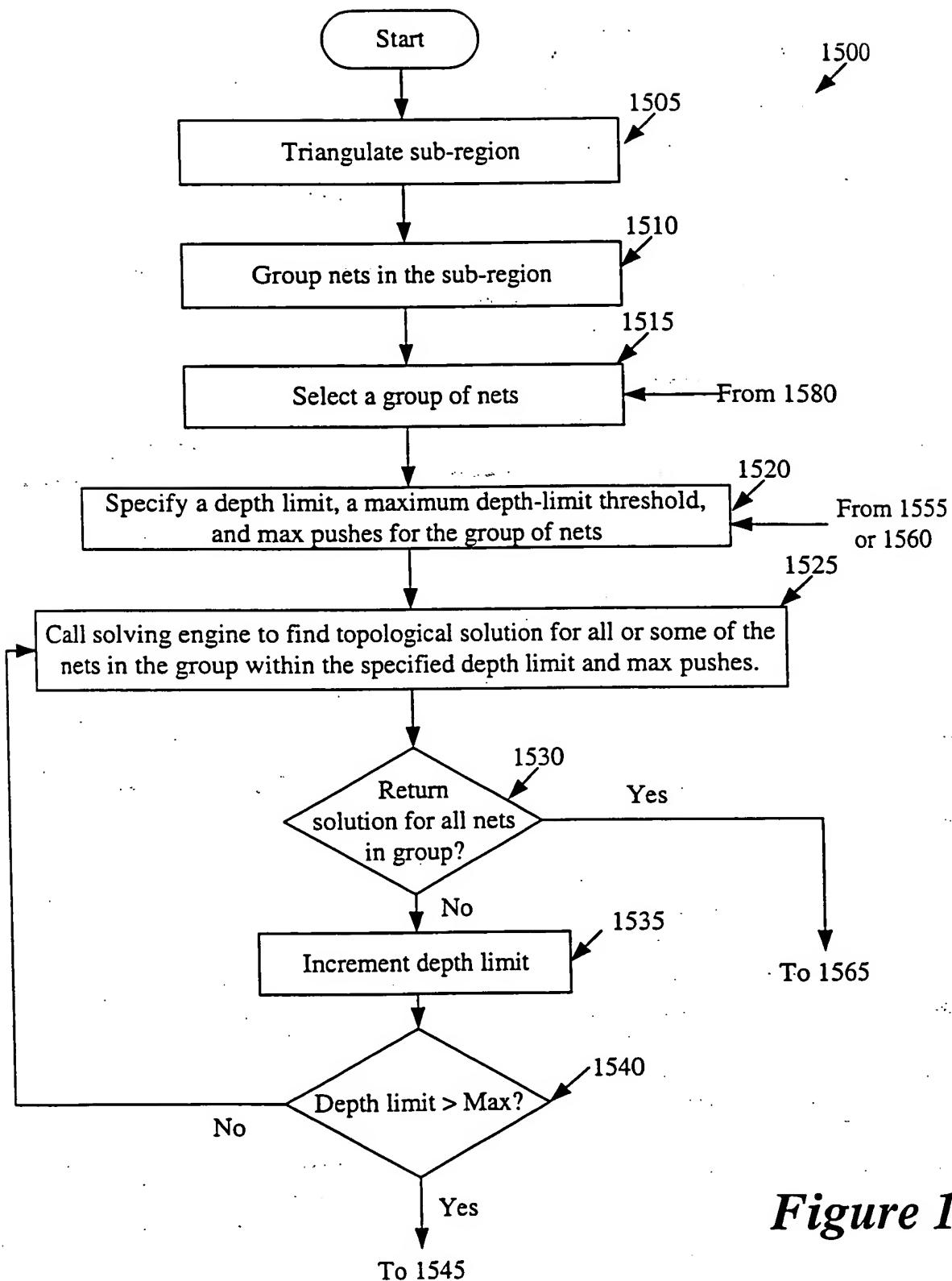


Figure 13

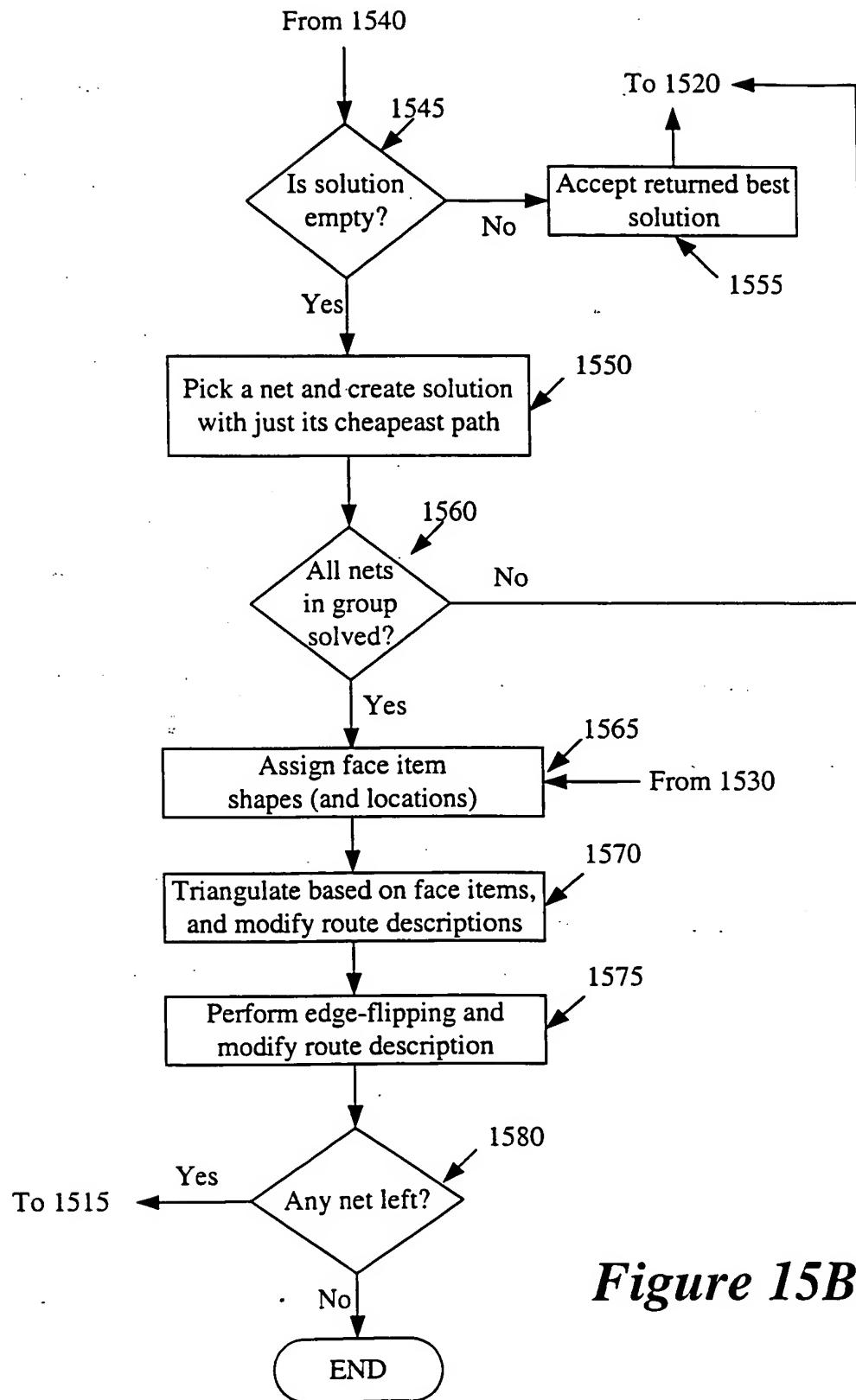
**Figure 14**



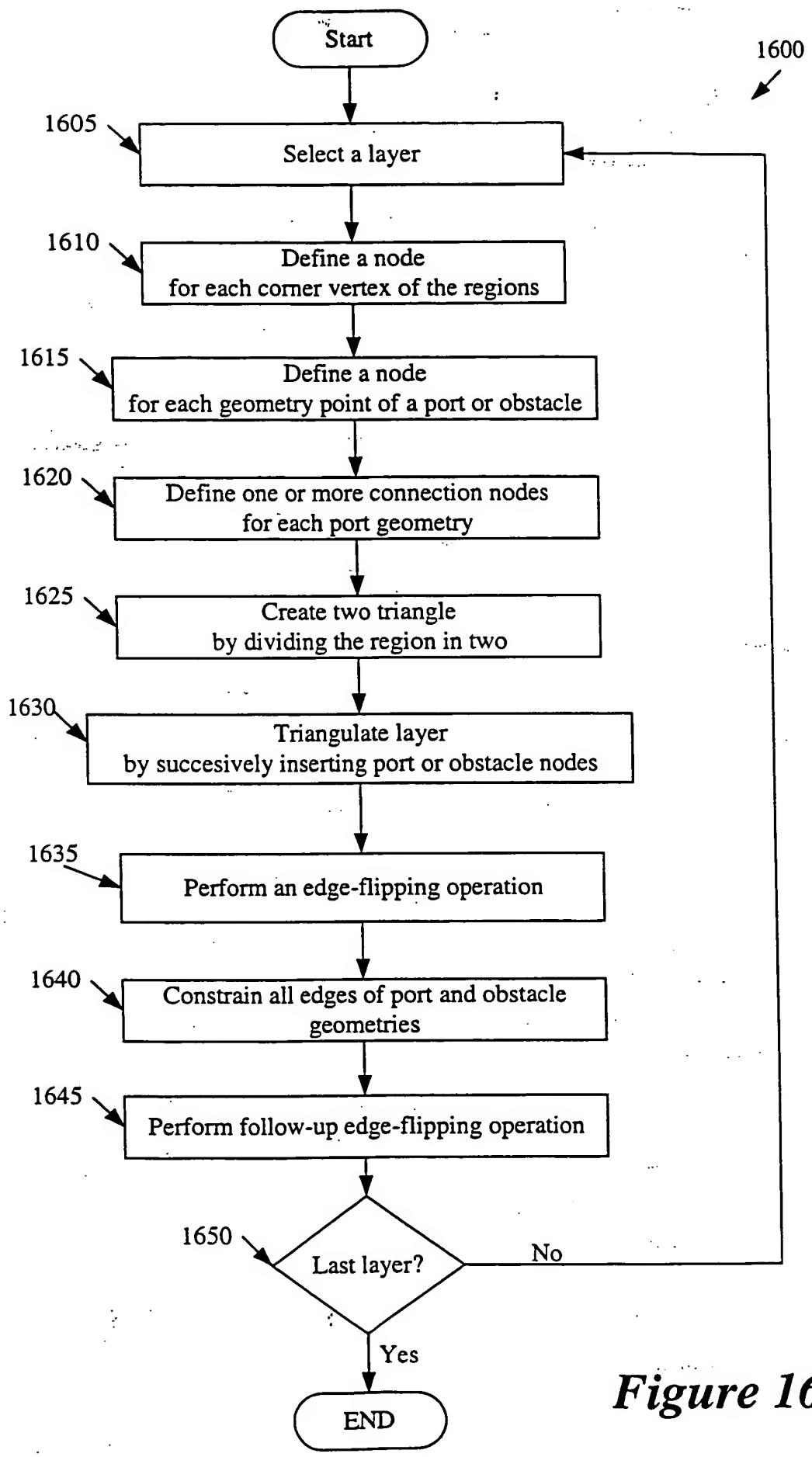


*Figure 15A*

*Figure 15: Figure 15A  
Figure 15B*

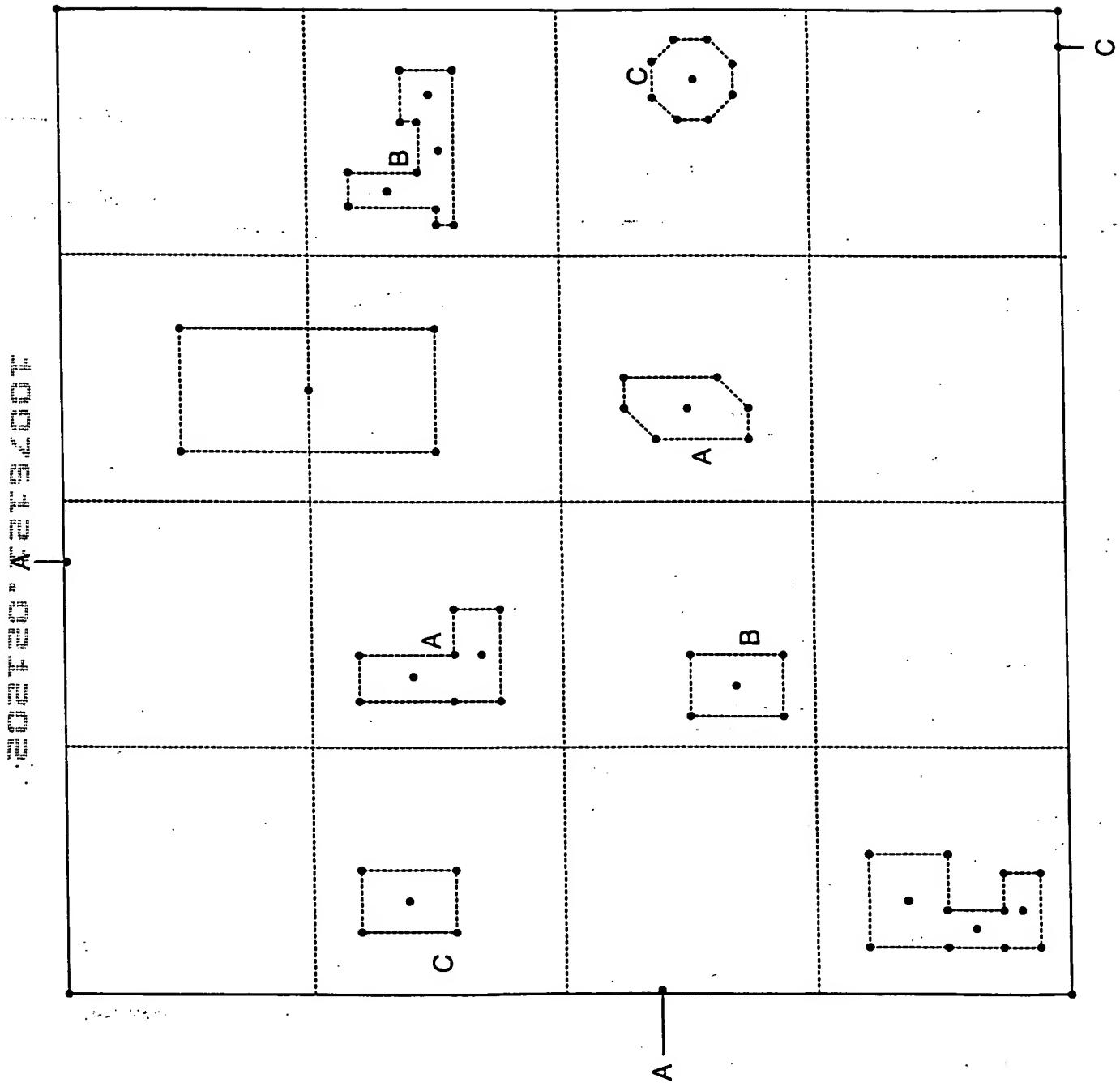


**Figure 15B**



**Figure 16**

Figure 17



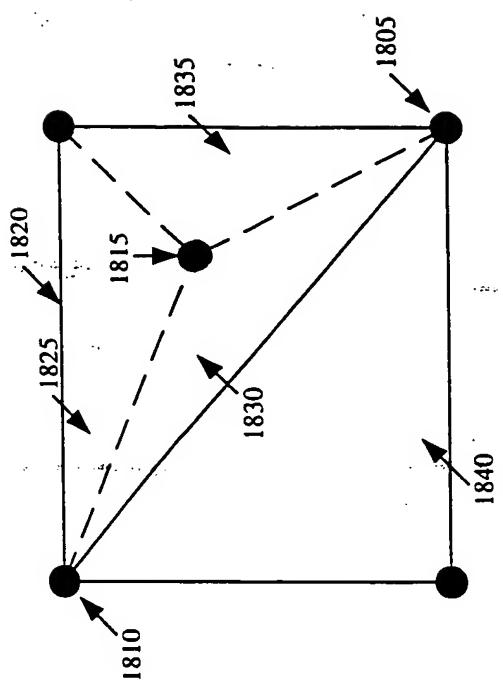


Figure 18

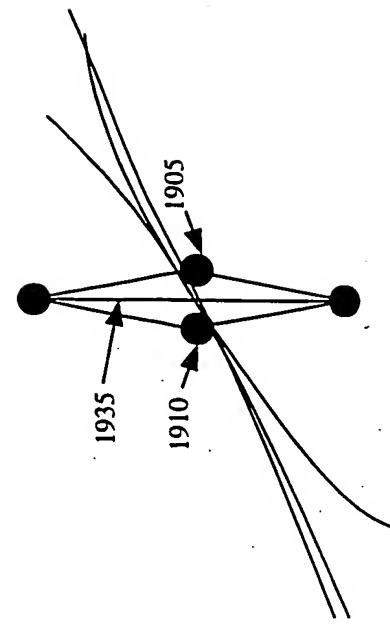


Figure 19

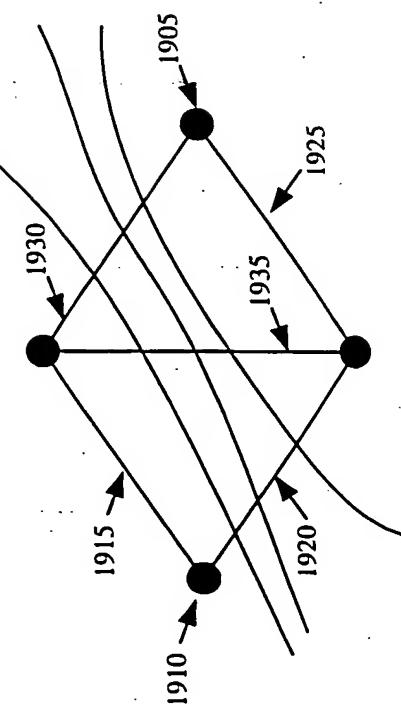


Figure 20

Figure 21

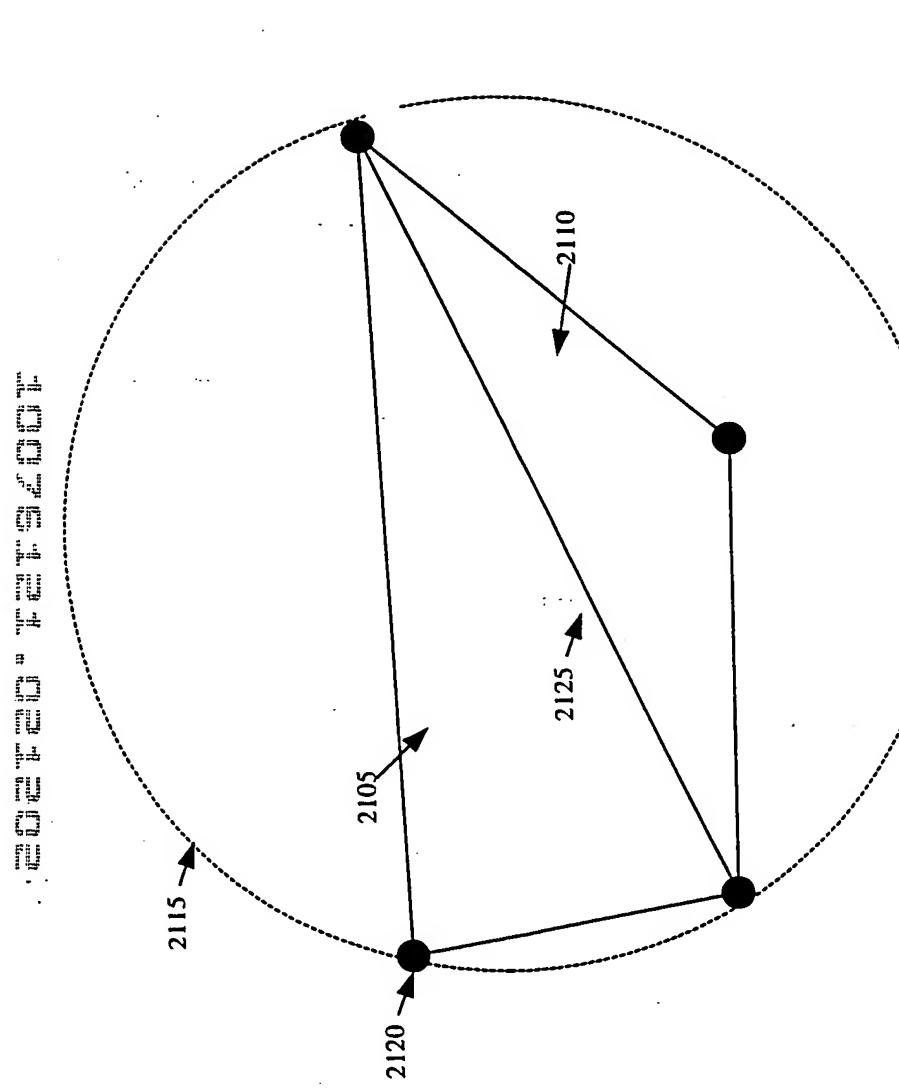


Figure 22

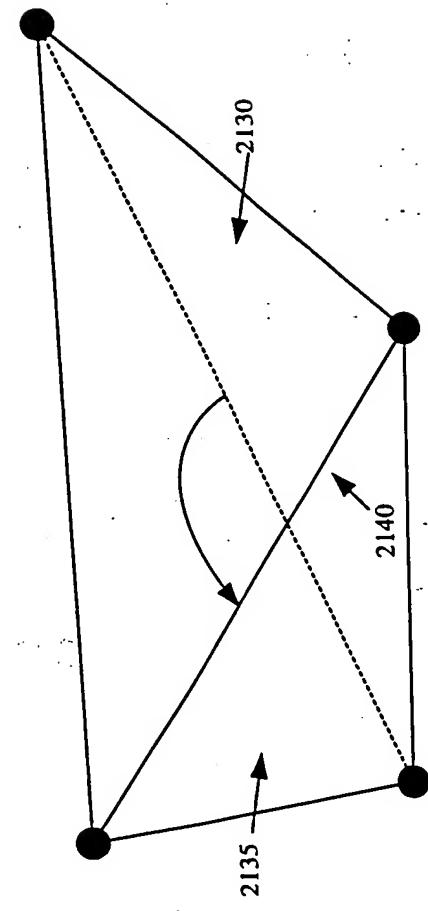


Figure 23

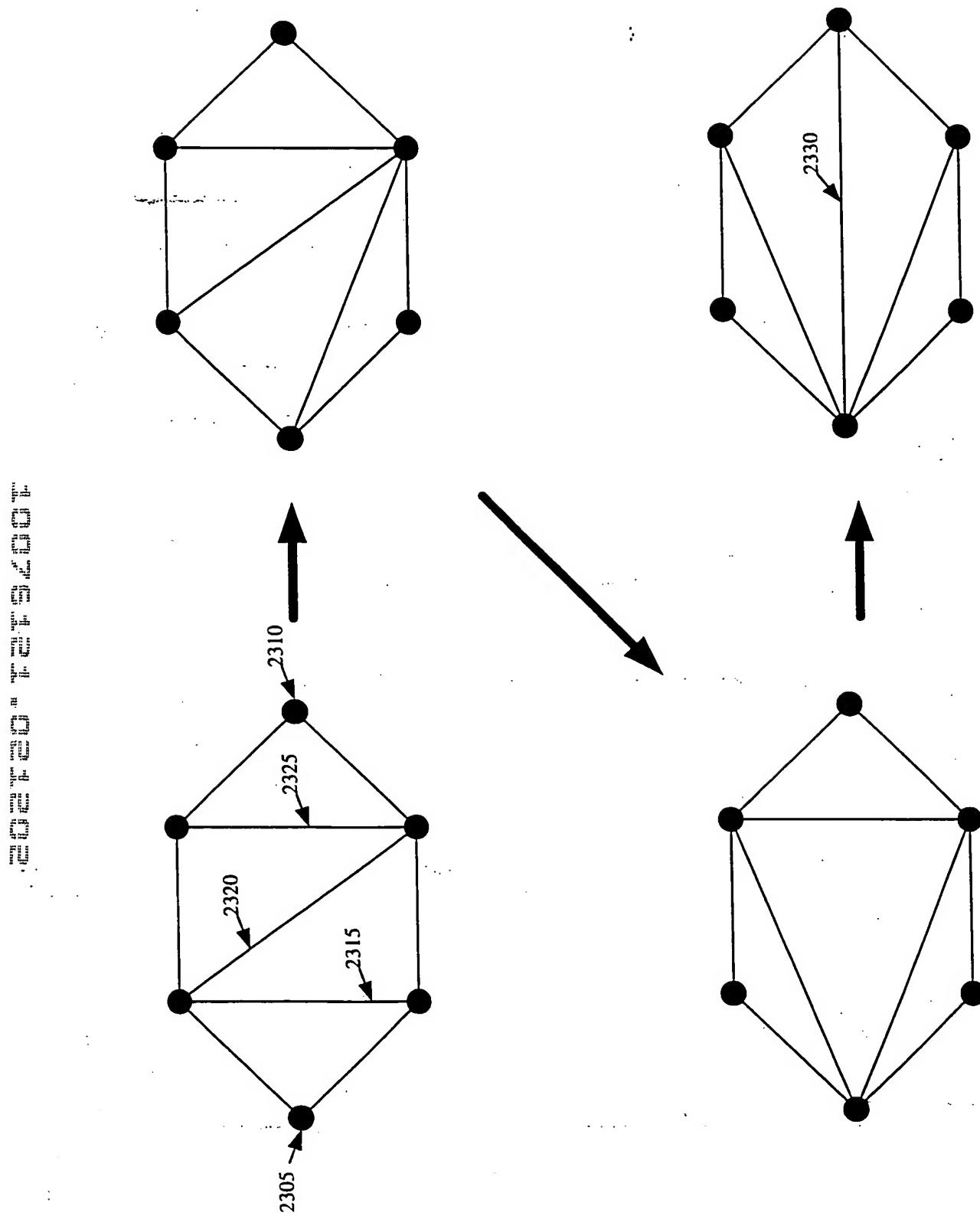
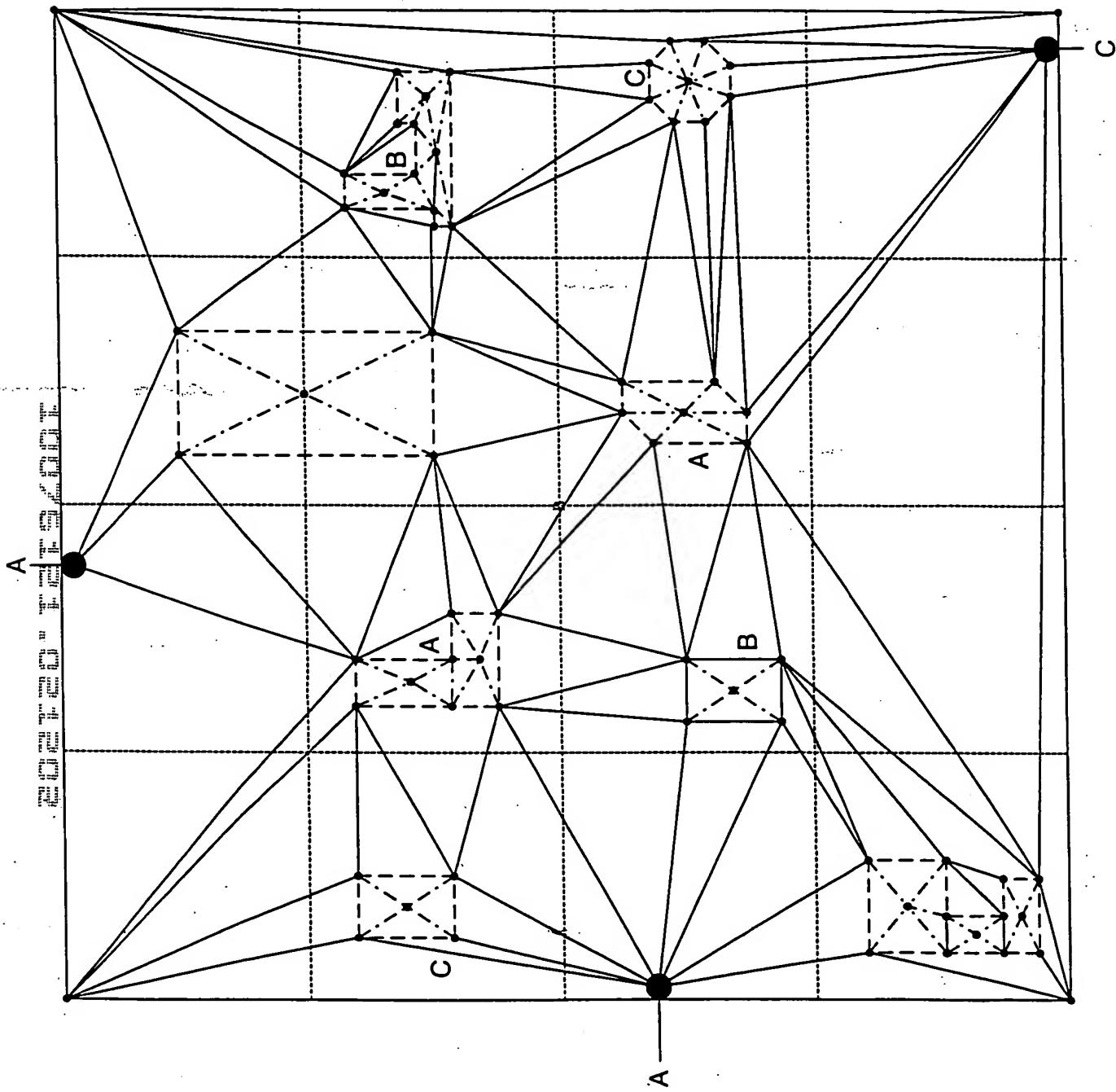
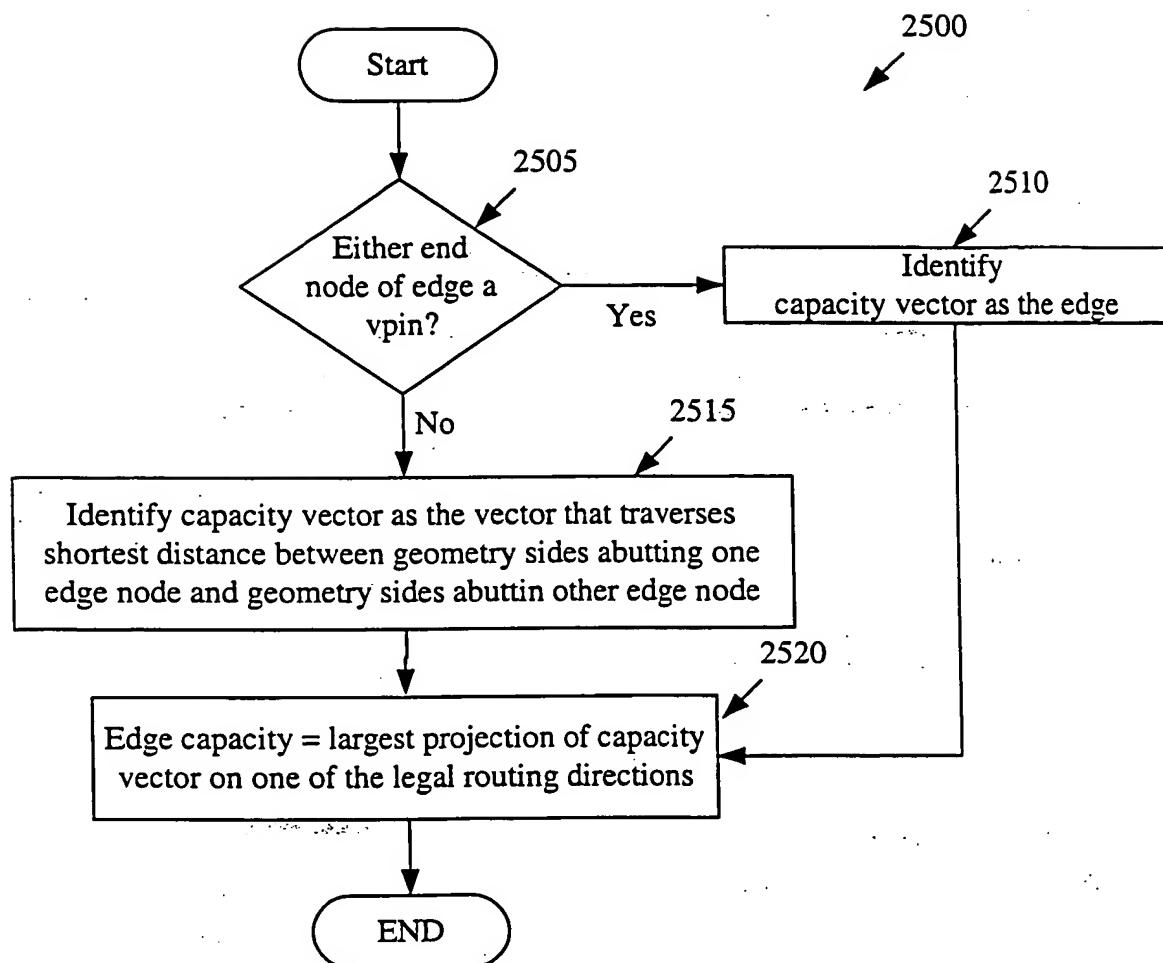


Figure 24





*Figure 25*

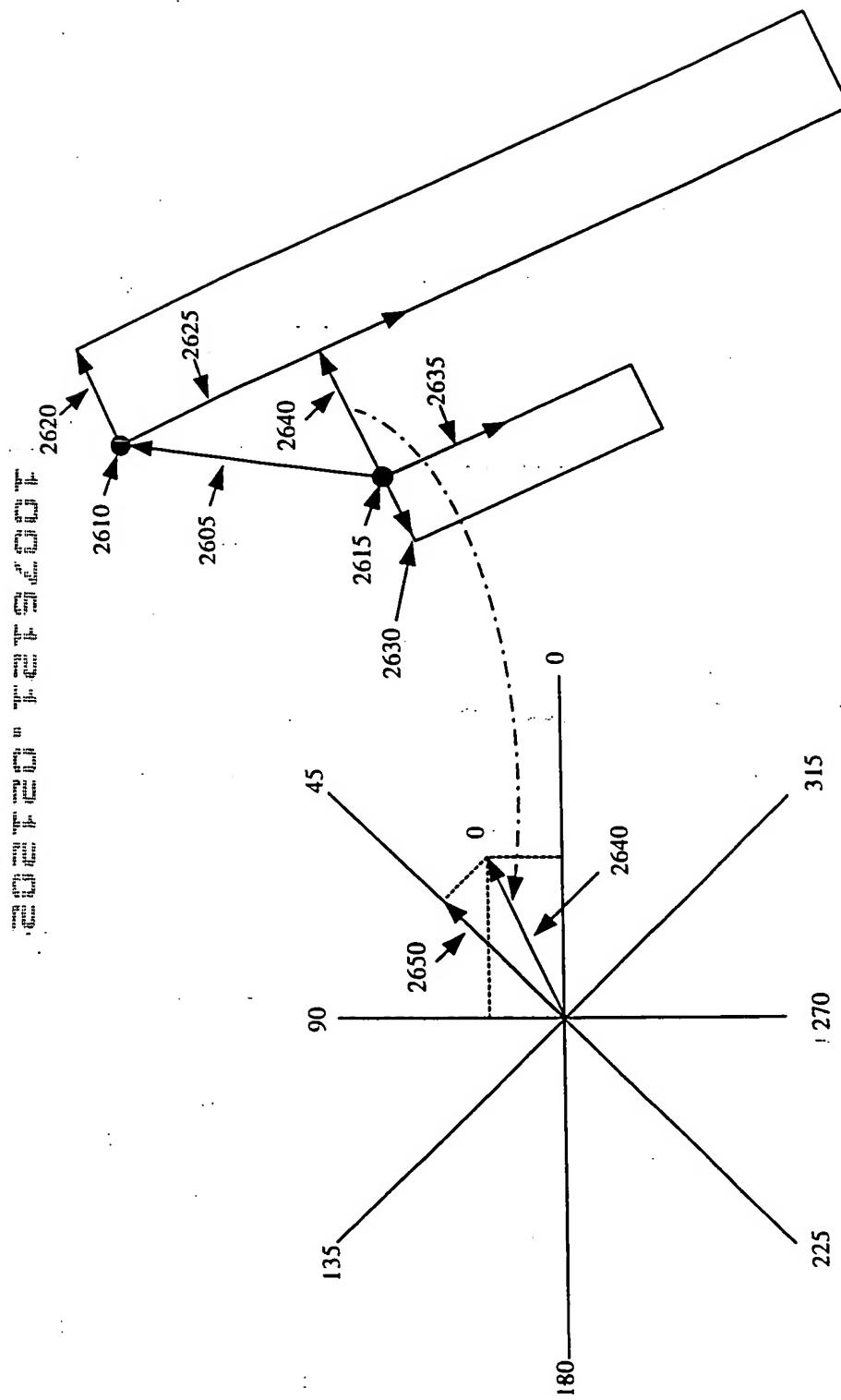


Figure 26

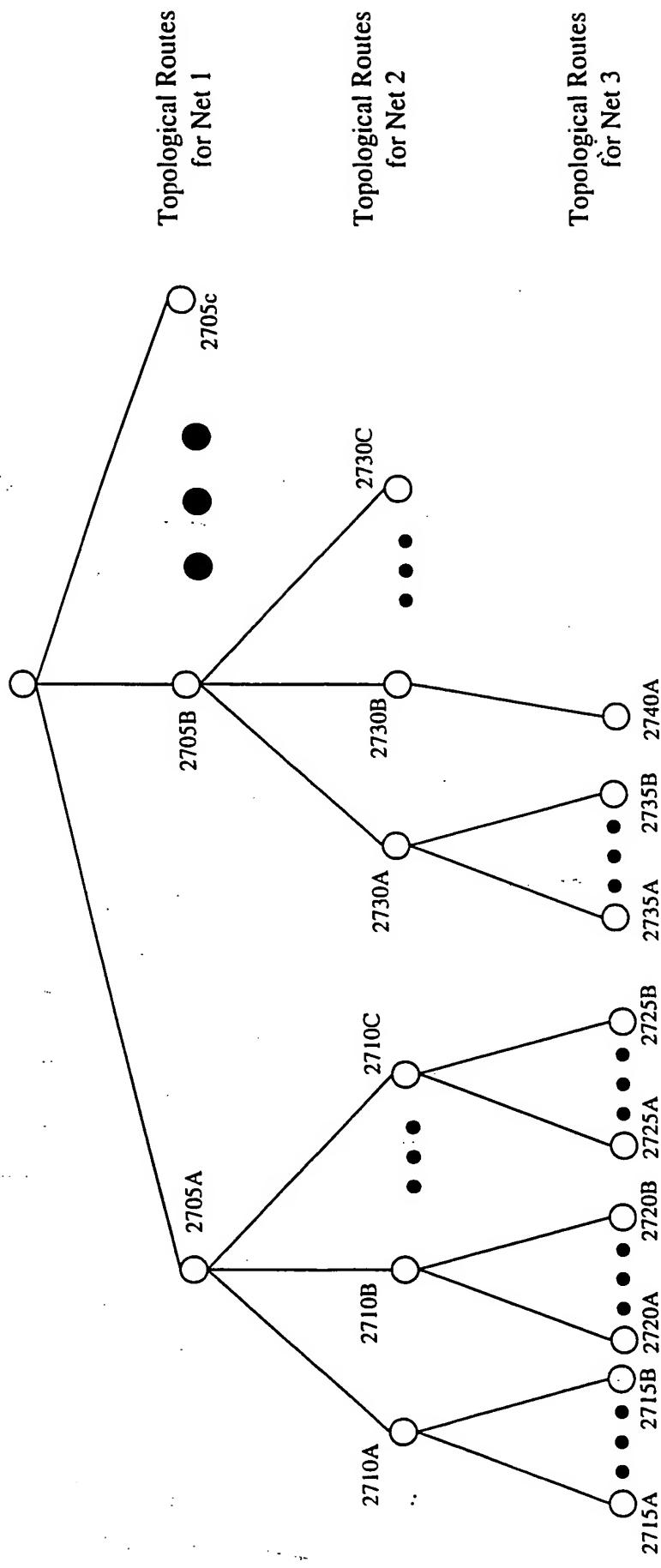
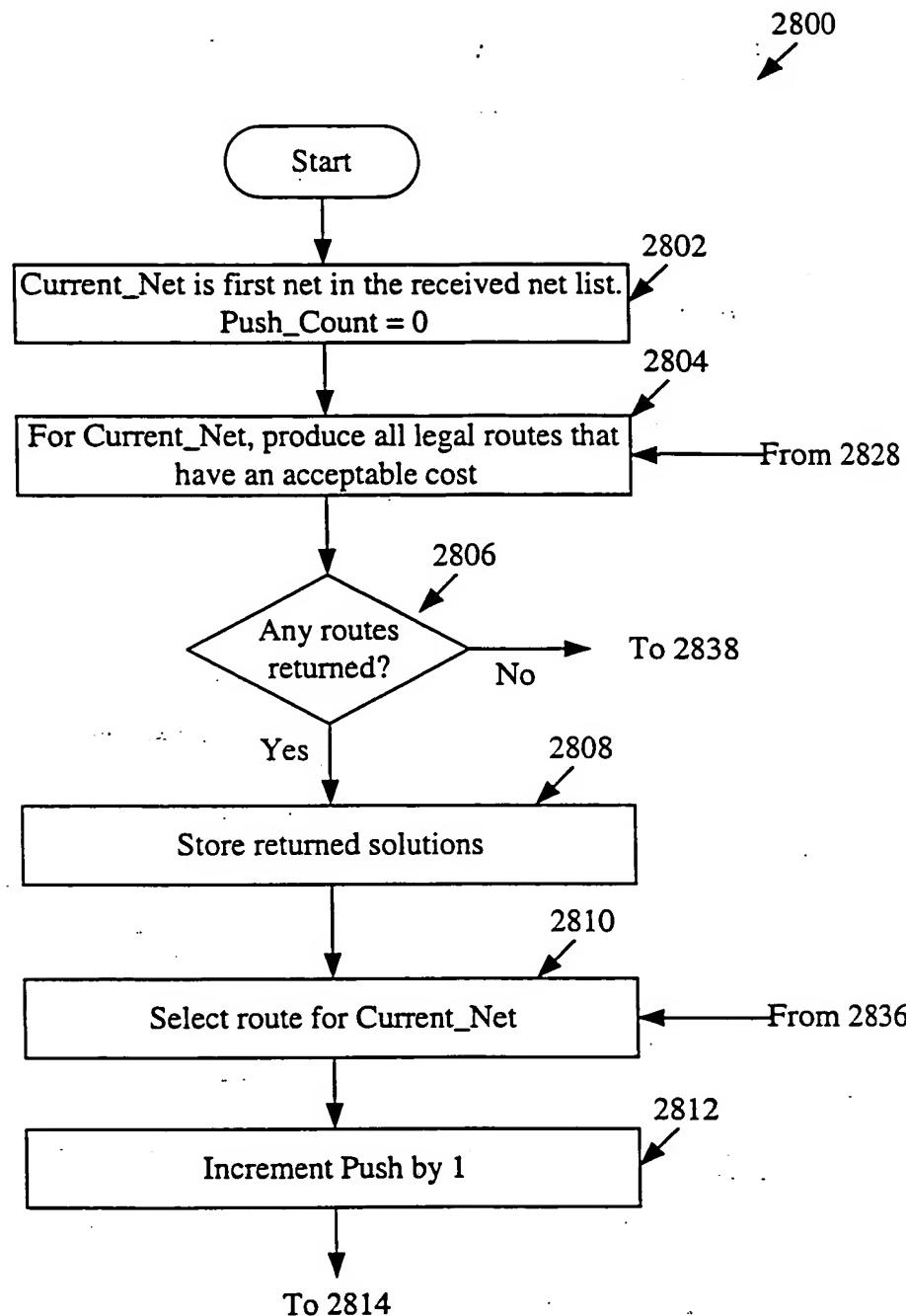


Figure 27



*Figure 28A*

*Figure 28:* *Figure 28A*  
*Figure 28B*  
*Figure 28C*

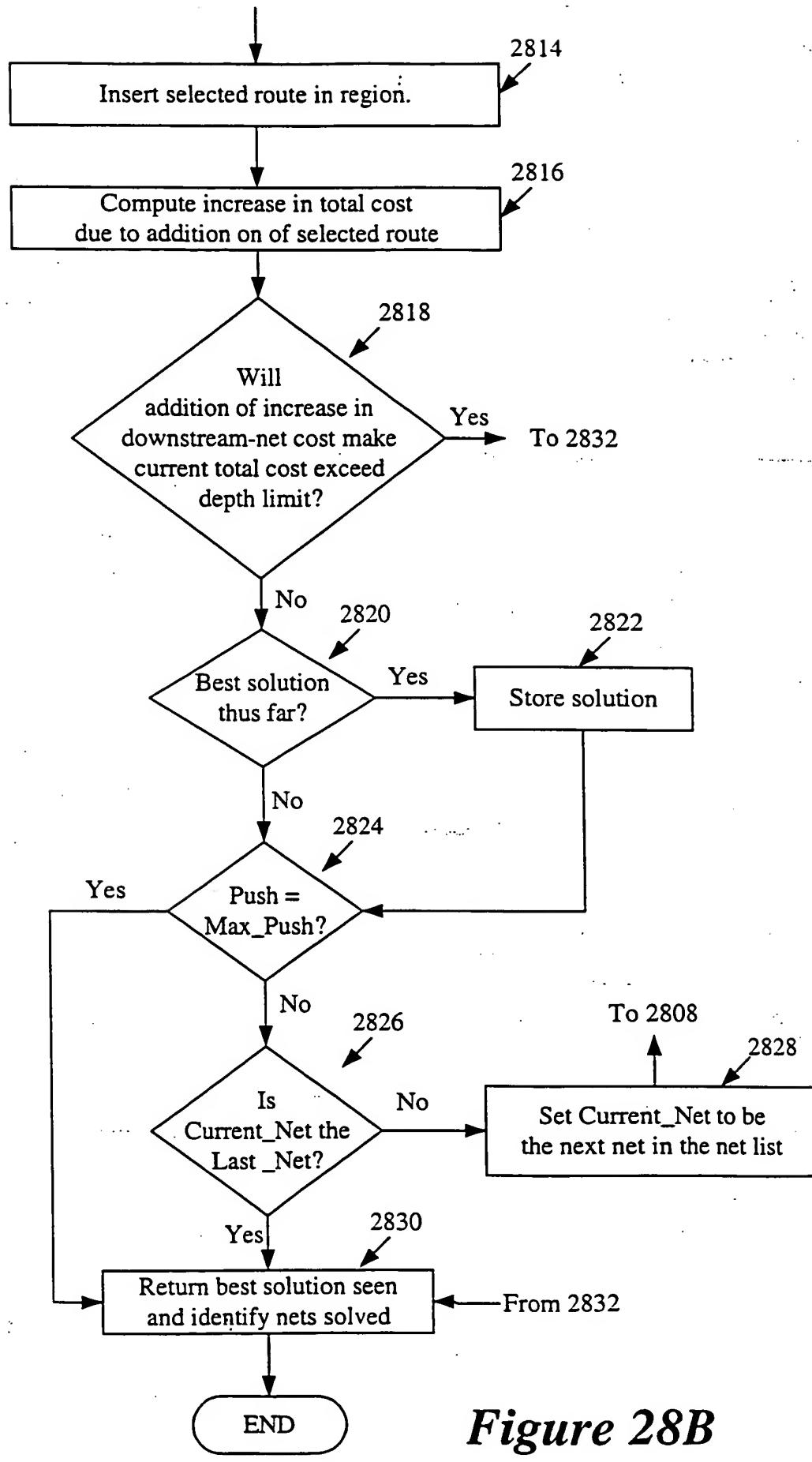
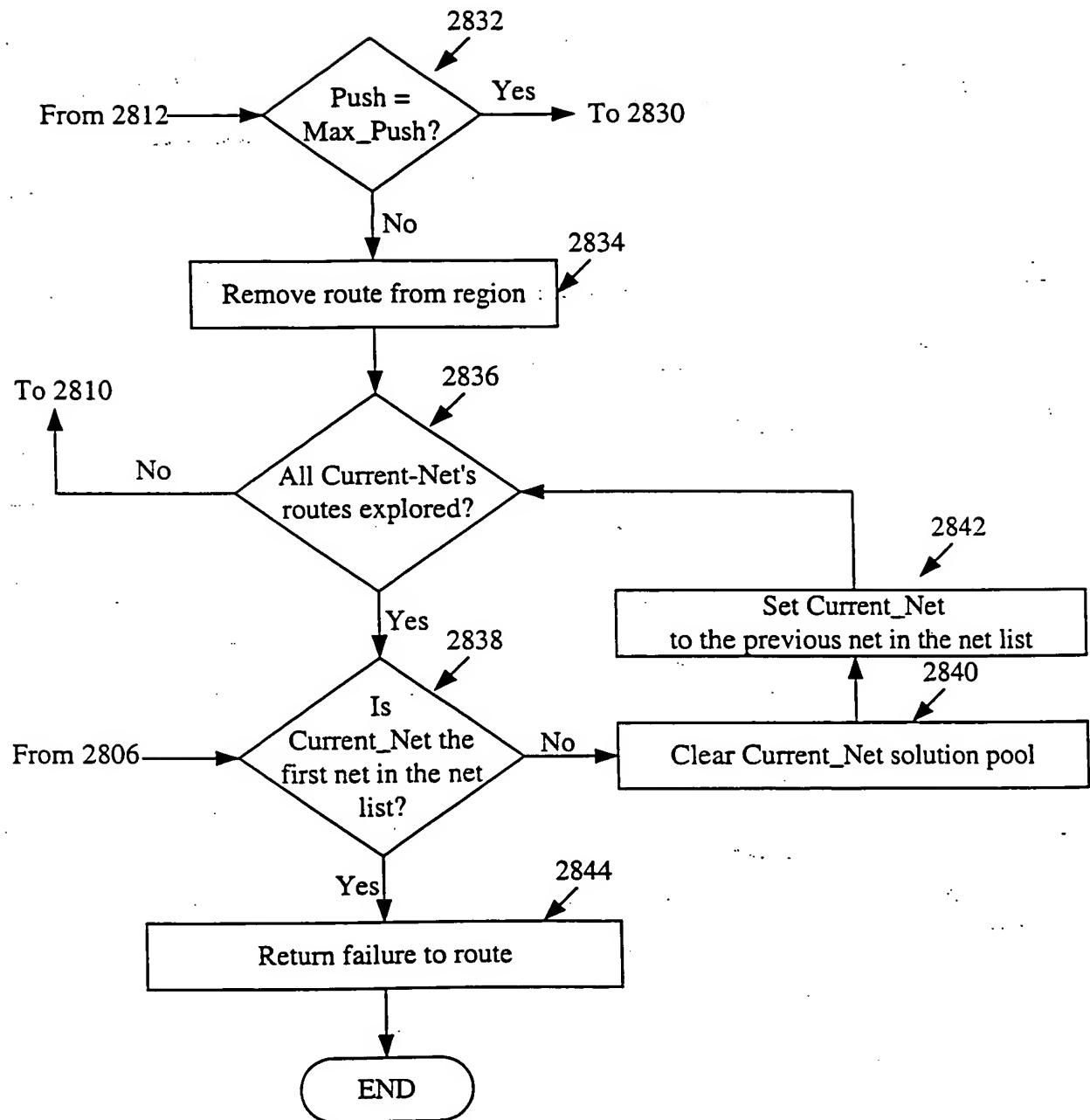
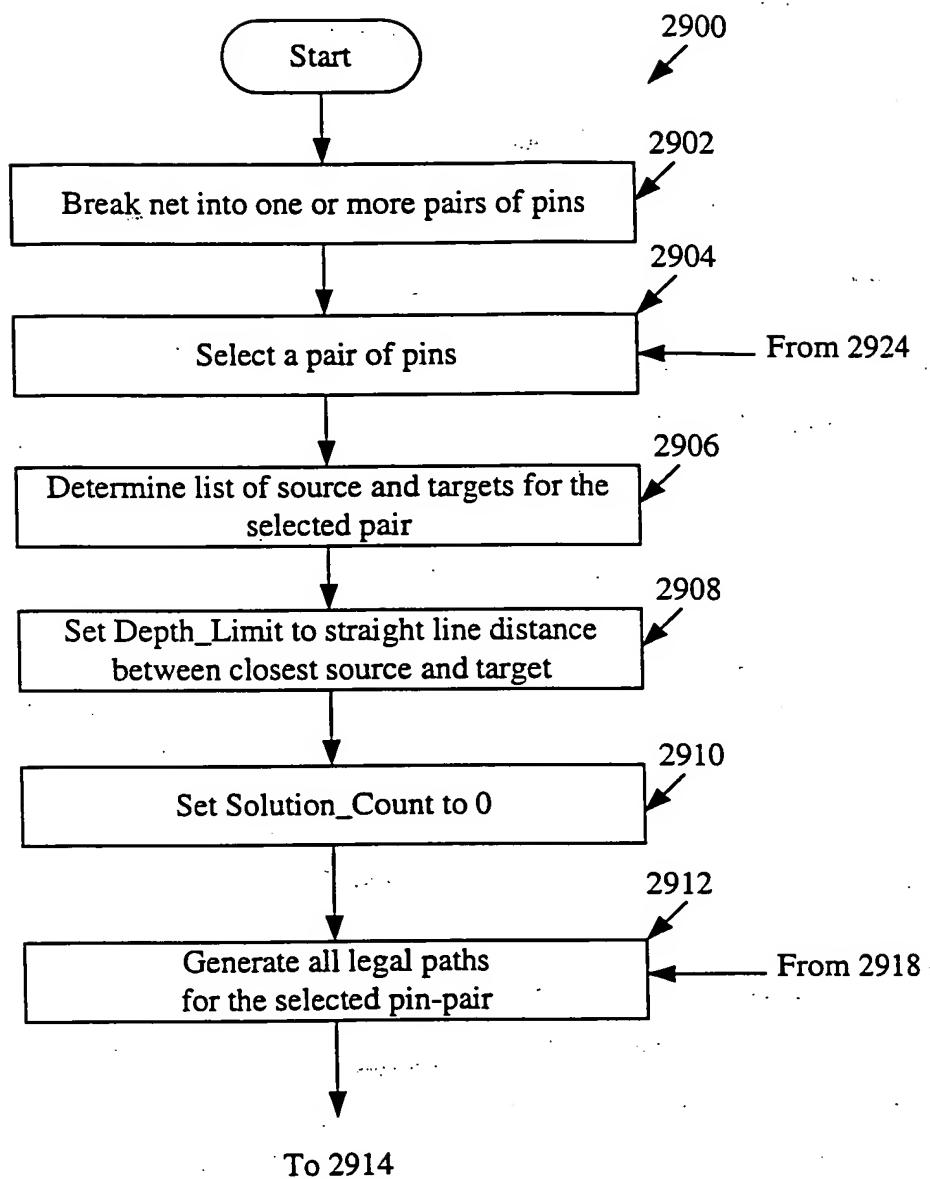


Figure 28B



*Figure 28C*



*Figure 29A*

*Figure 29: Figure 29A  
Figure 29B*

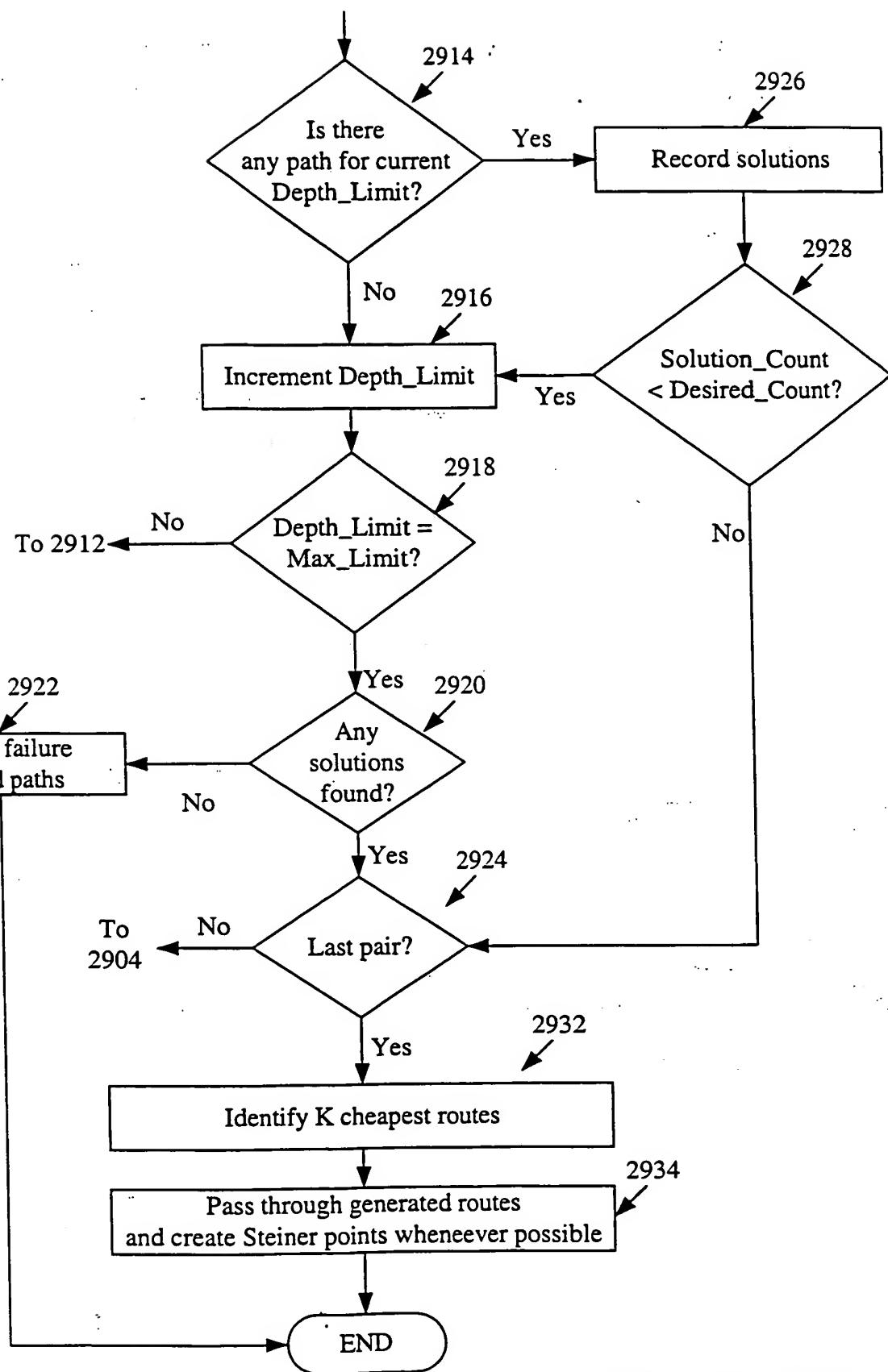


Figure 29B

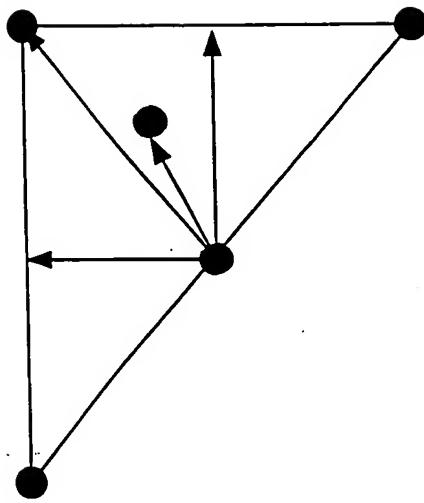


Figure 32

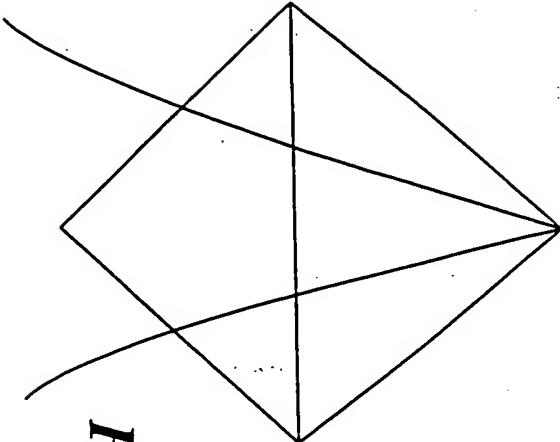


Figure 30A

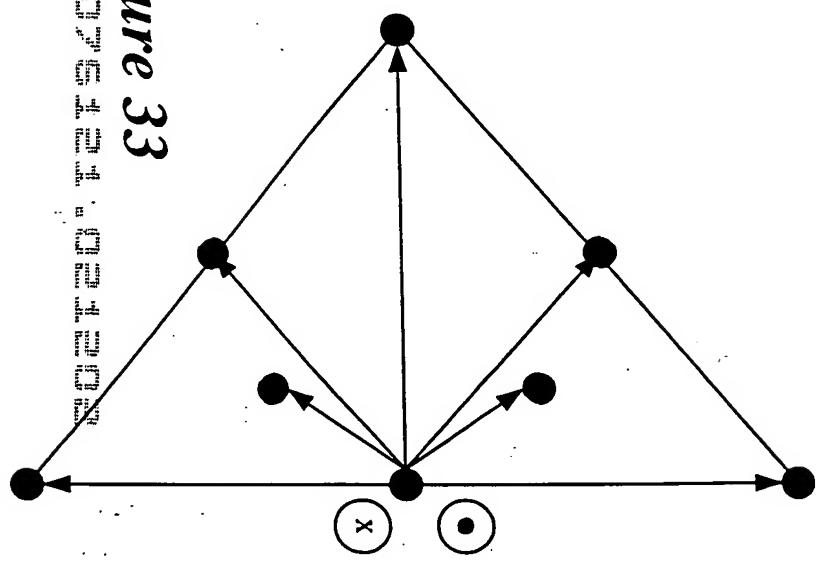


Figure 33

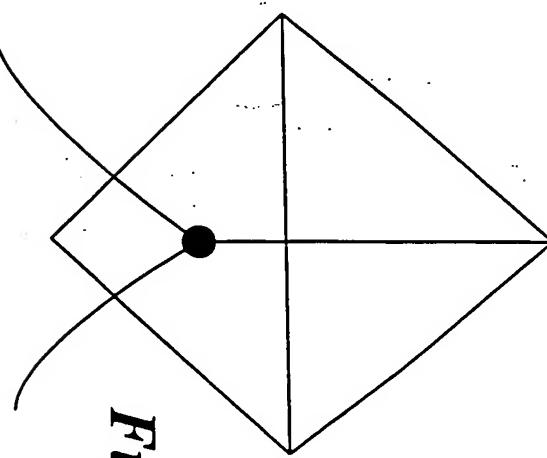


Figure 30B

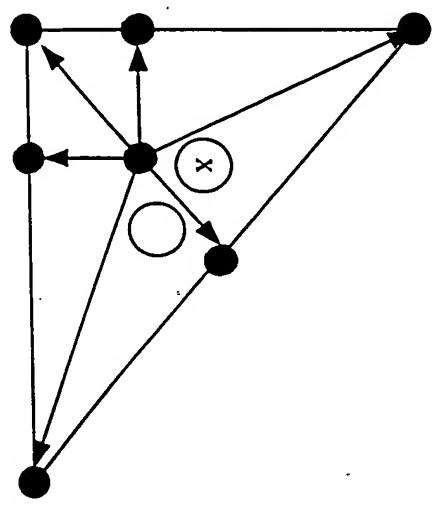
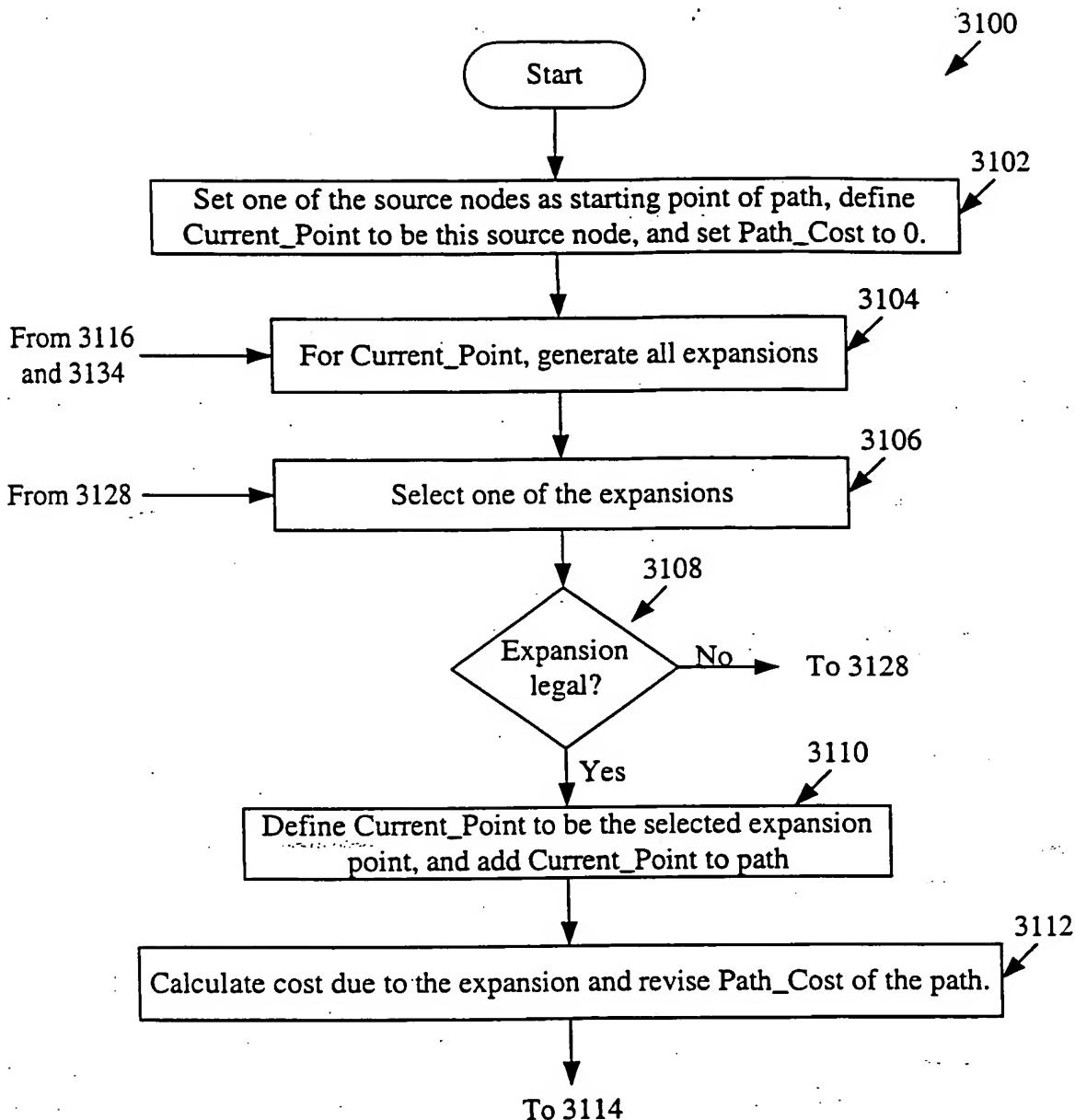
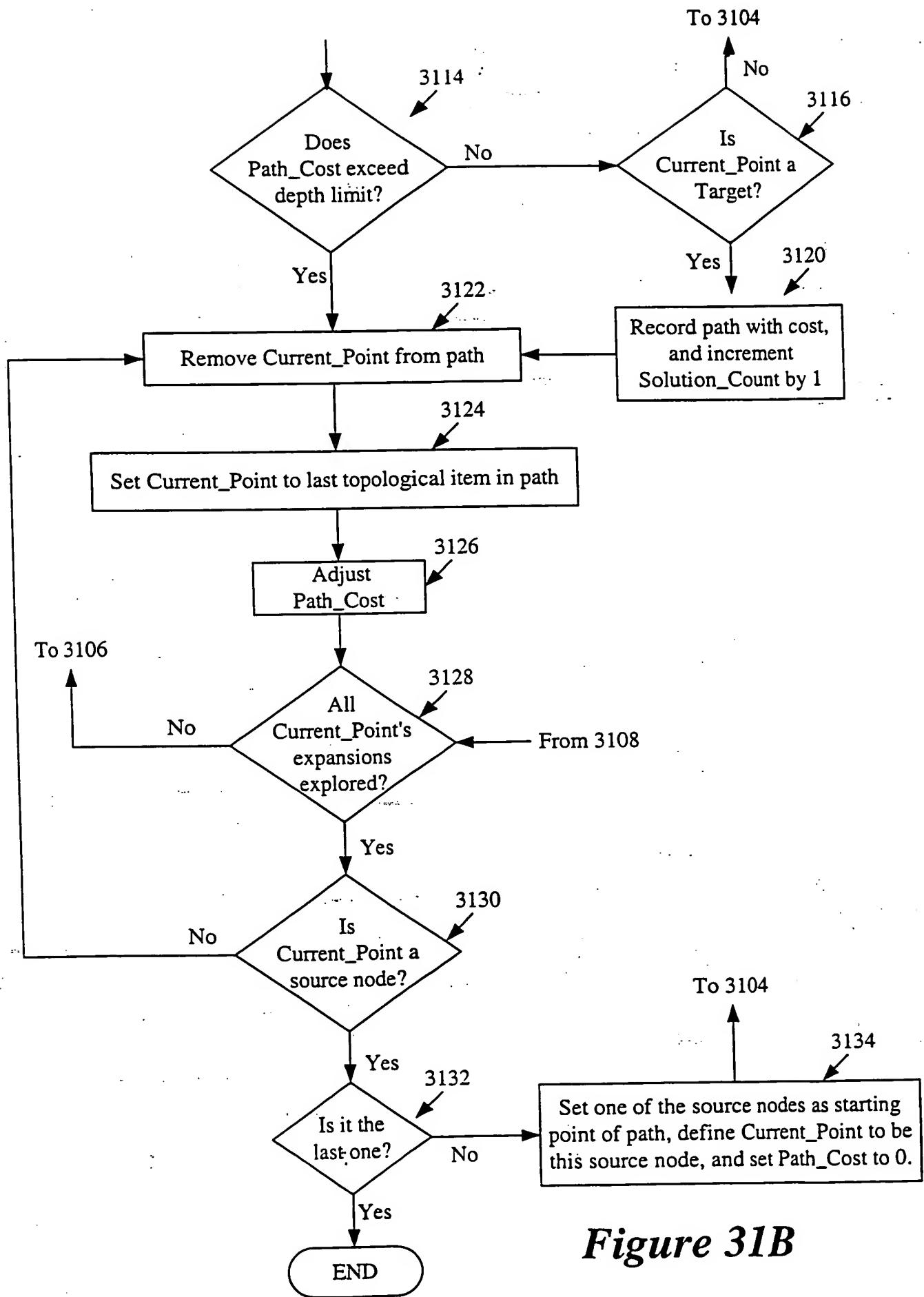


Figure 34

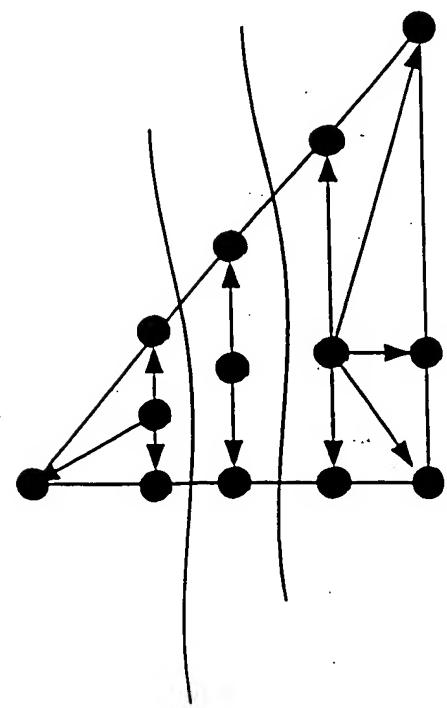
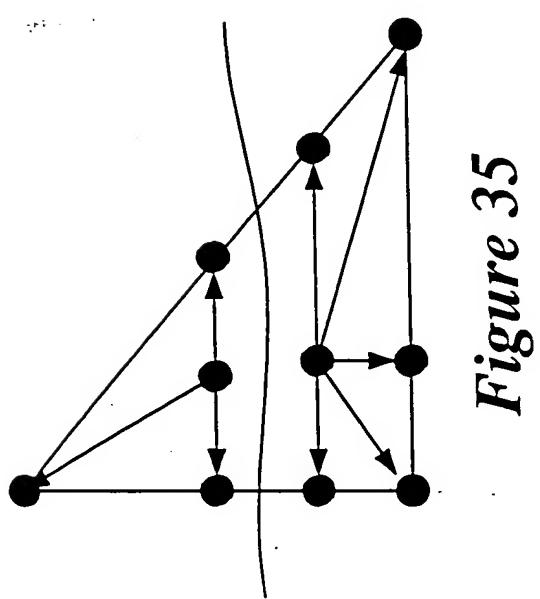
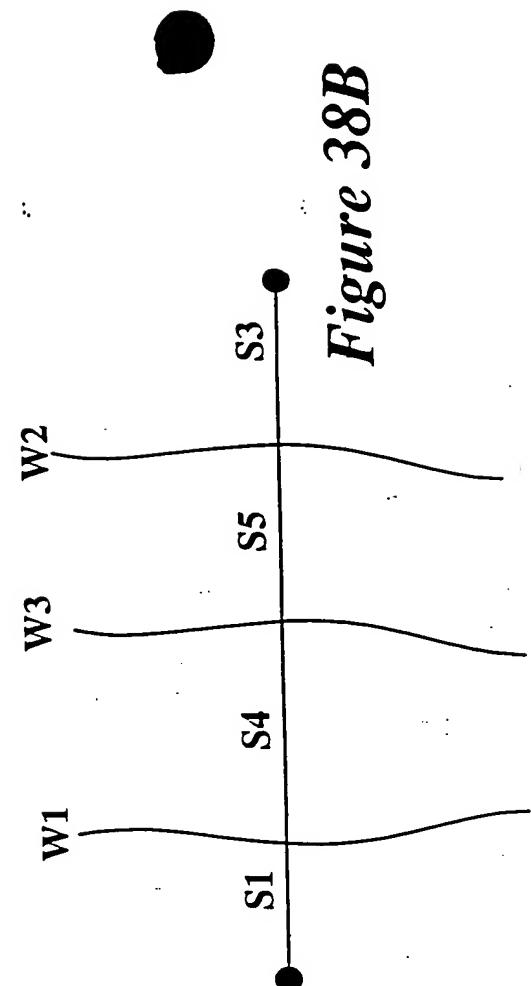
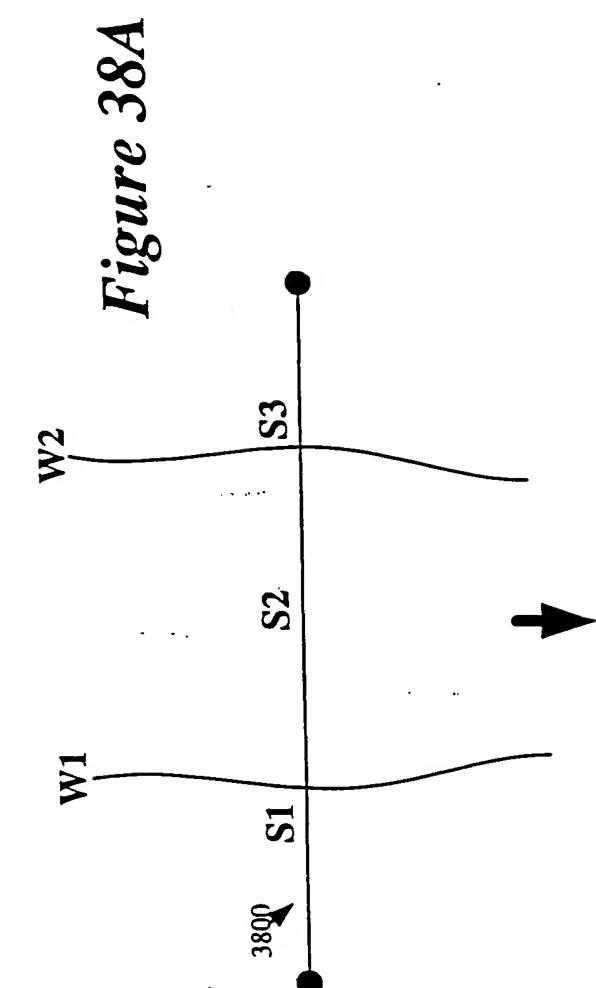


*Figure 31A*

*Figure 31: Figure 31A  
Figure 31B*



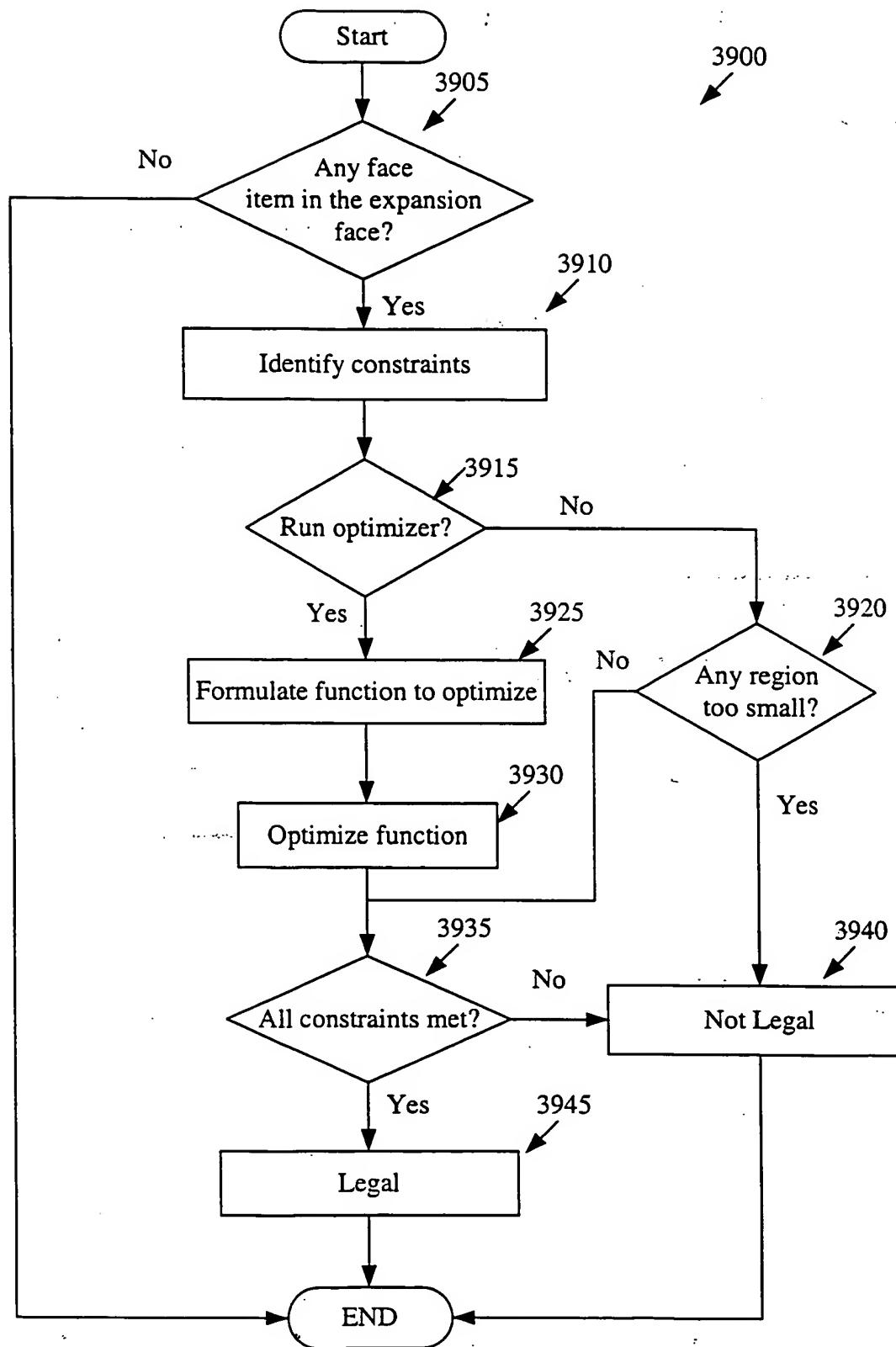
*Figure 31B*



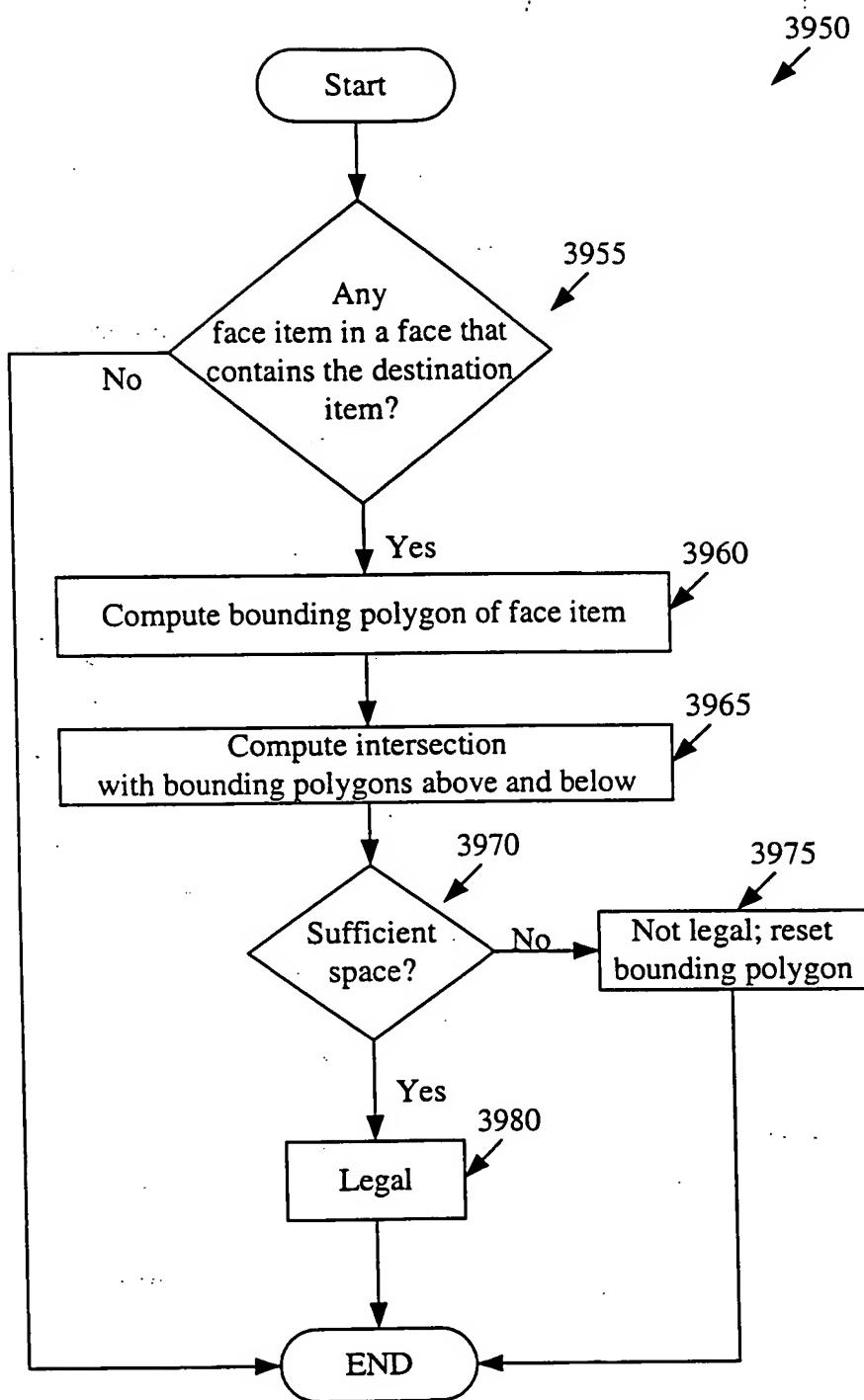
故其子曰：「吾父之子，其名何也？」

From:	To:	Node	Face Item	Edge Item
Node	• Planarity	• Vias	• Vias	• Planarity • Vias • Edge Capacity
	• Vias		• Vias	• Vias • Edge Capacity
				• Planarity • Vias • Edge Capacity

*Figure 37*



*Figure 39A*



*Figure 39B*

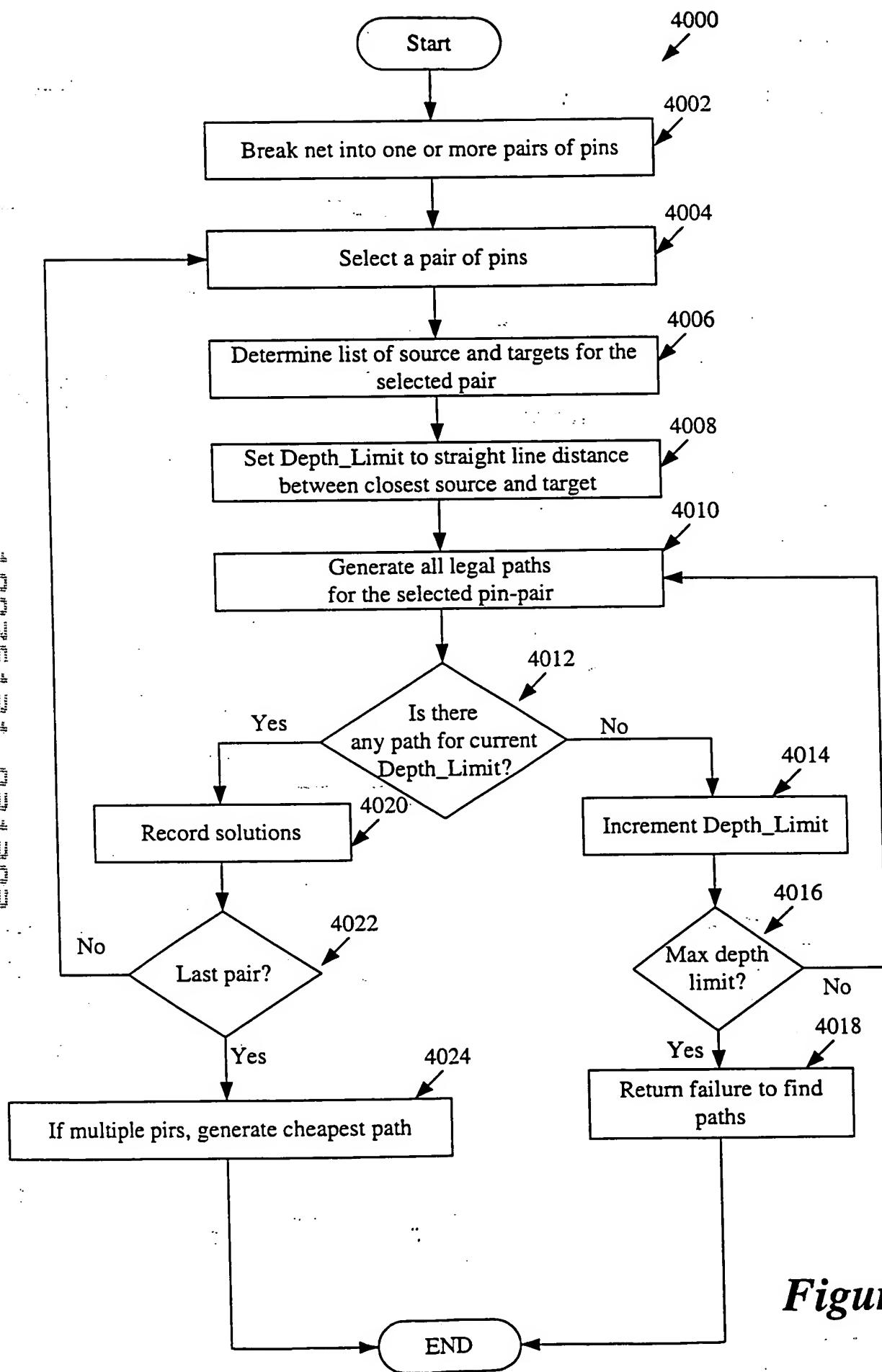
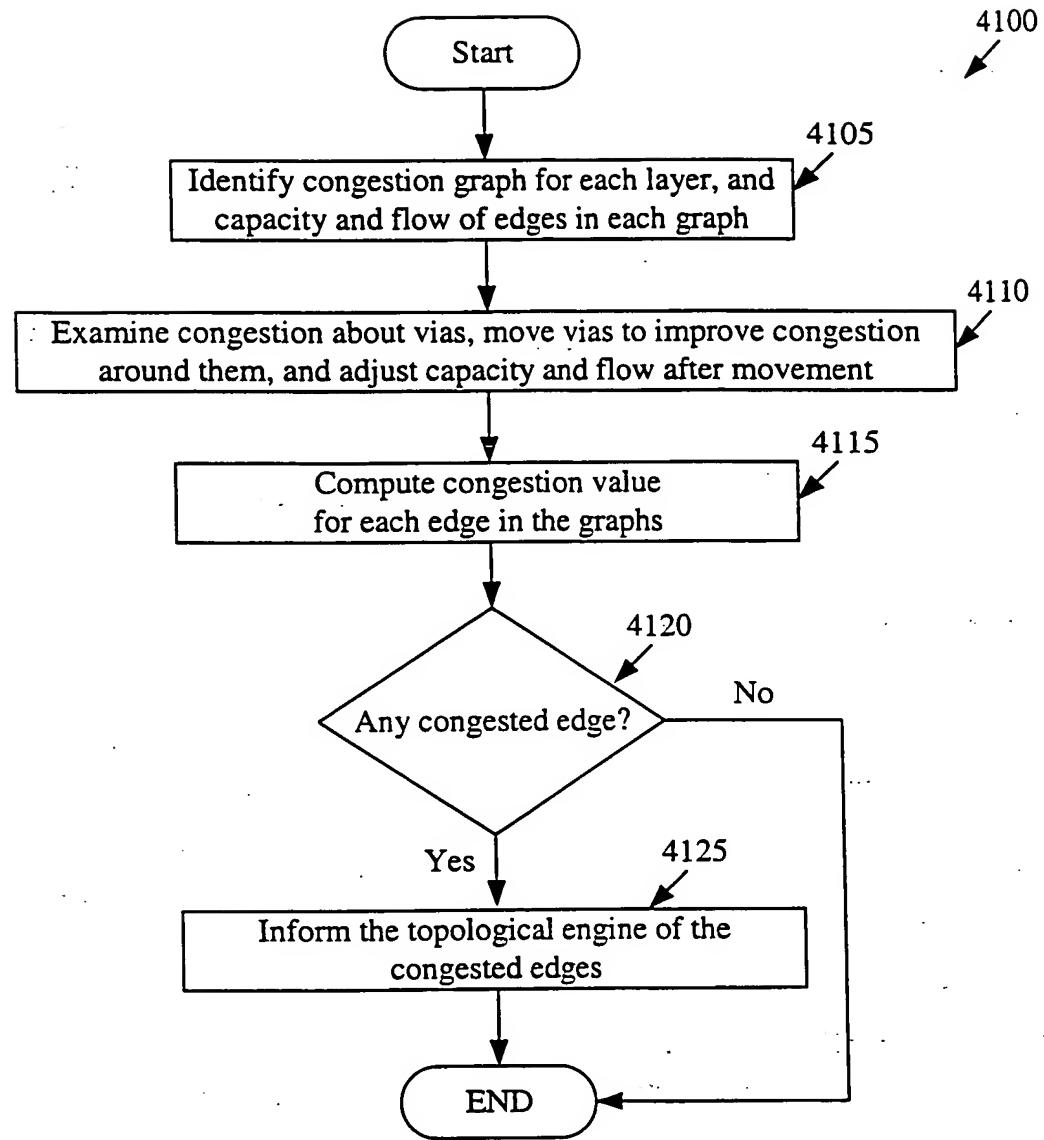
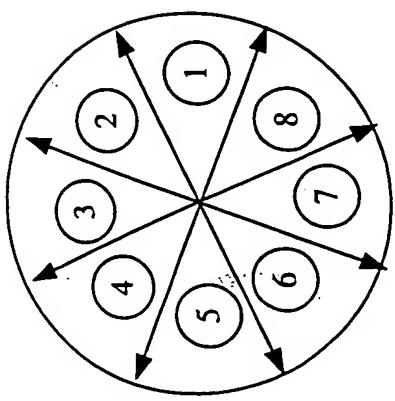


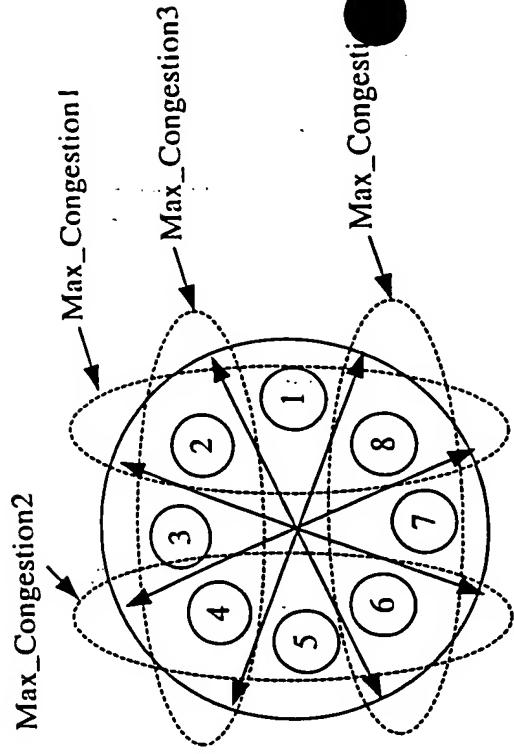
Figure 40



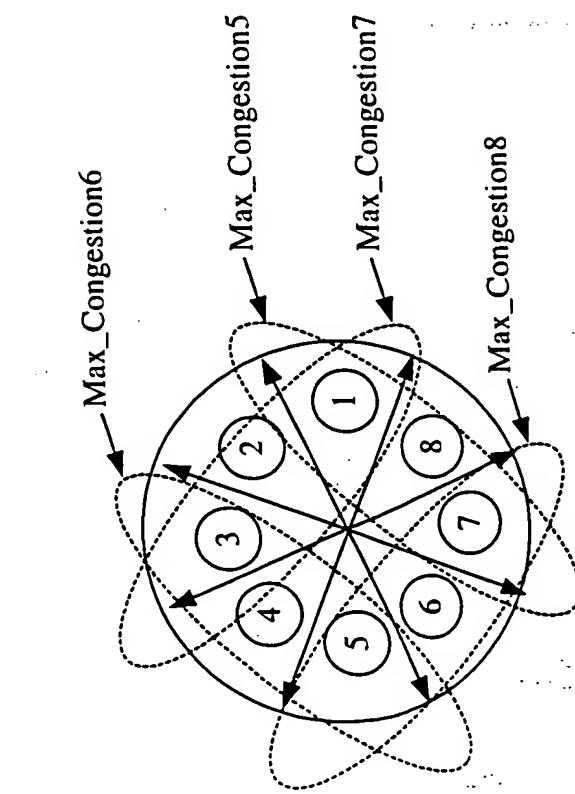
*Figure 41*



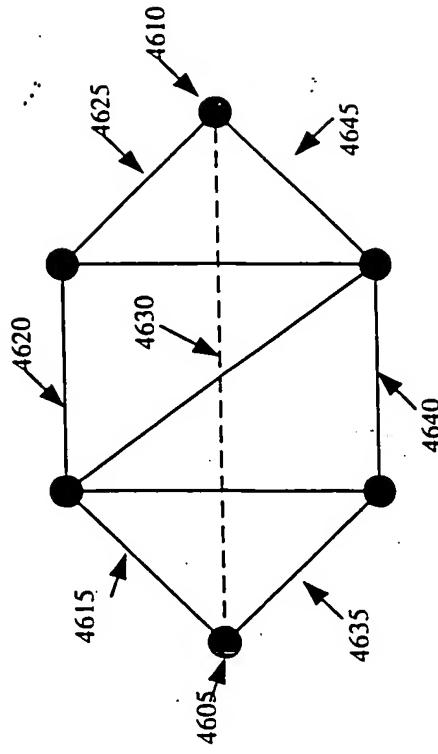
*Figure 42*



*Figure 44*



*Figure 45*



*Figure 46*

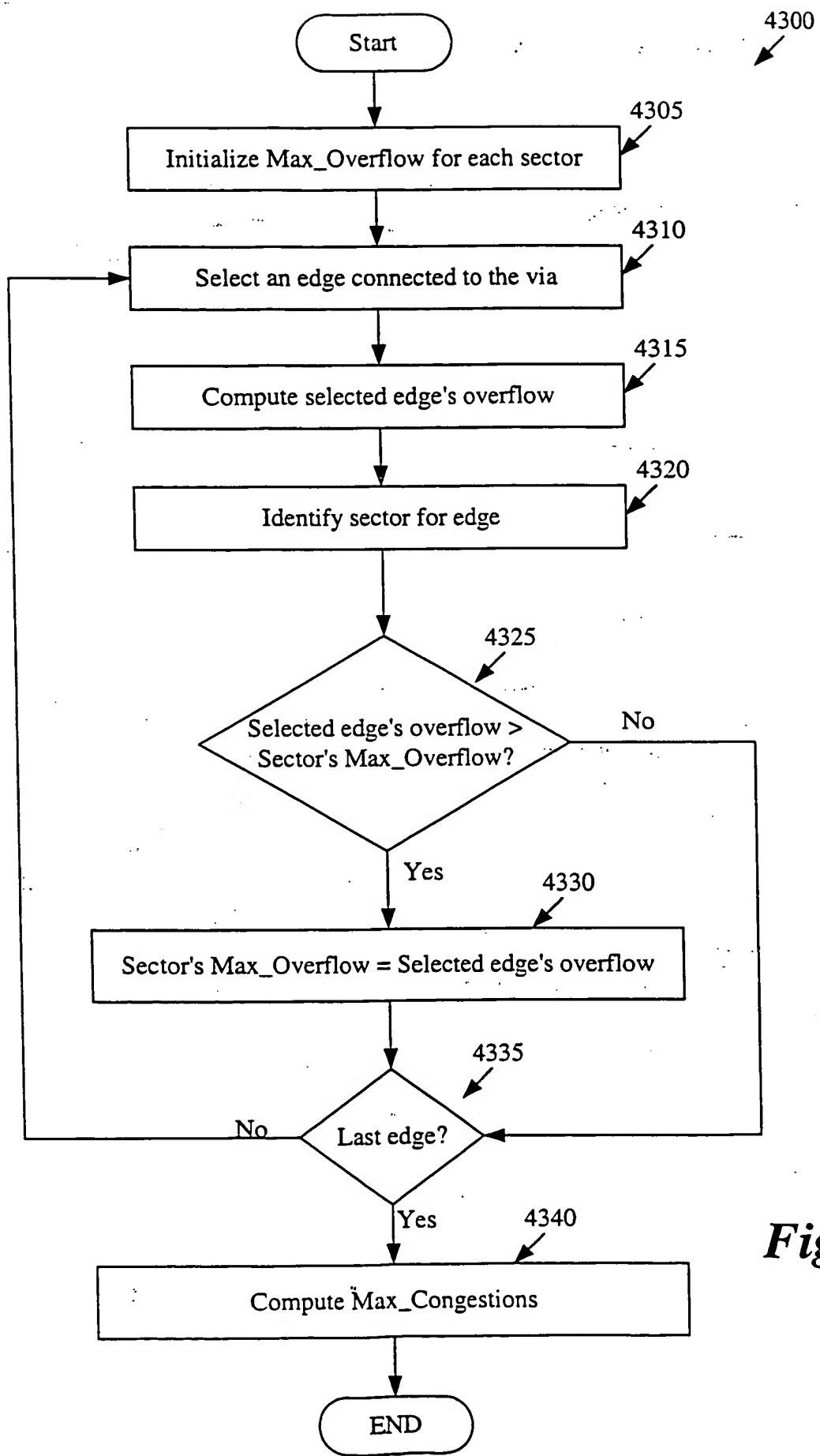


Figure 43

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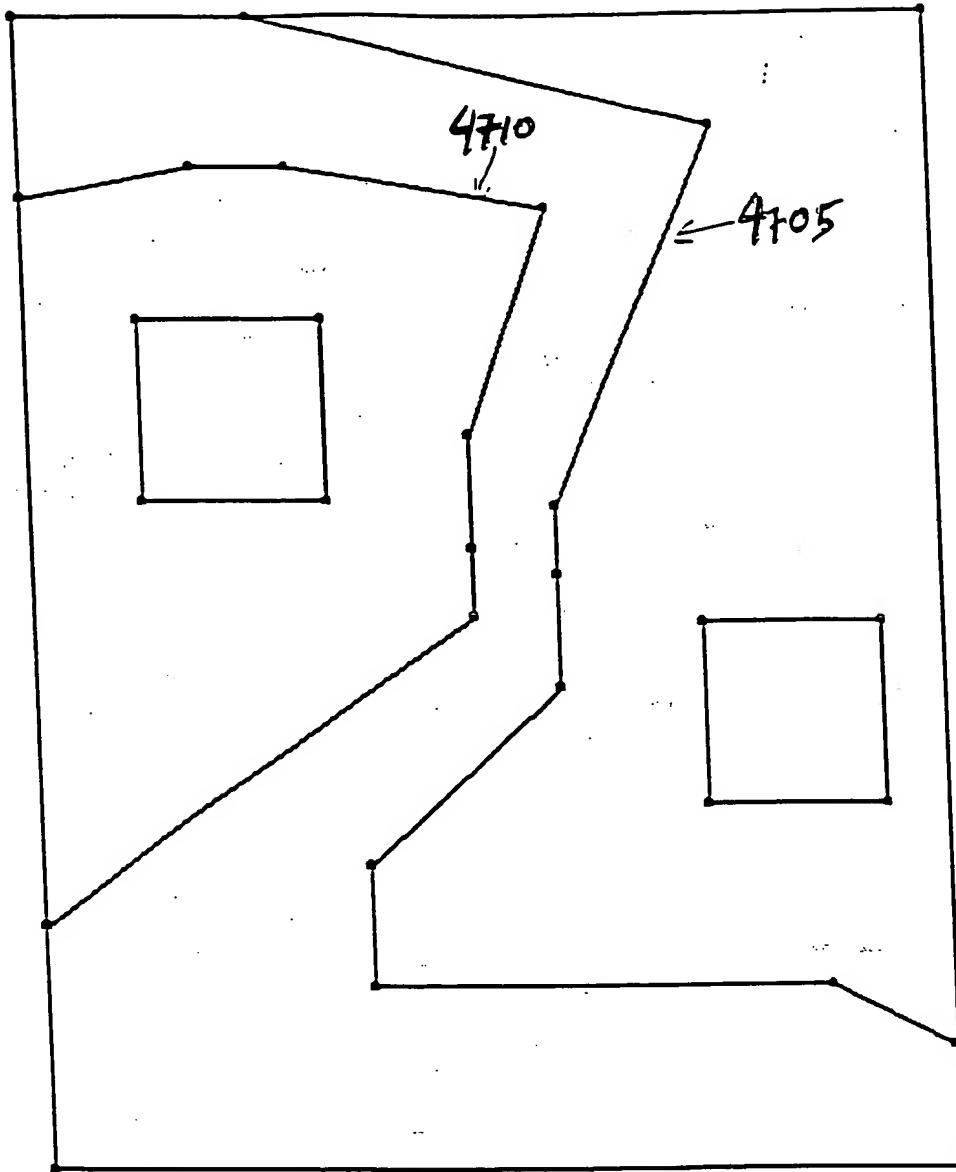


FIGURE 47

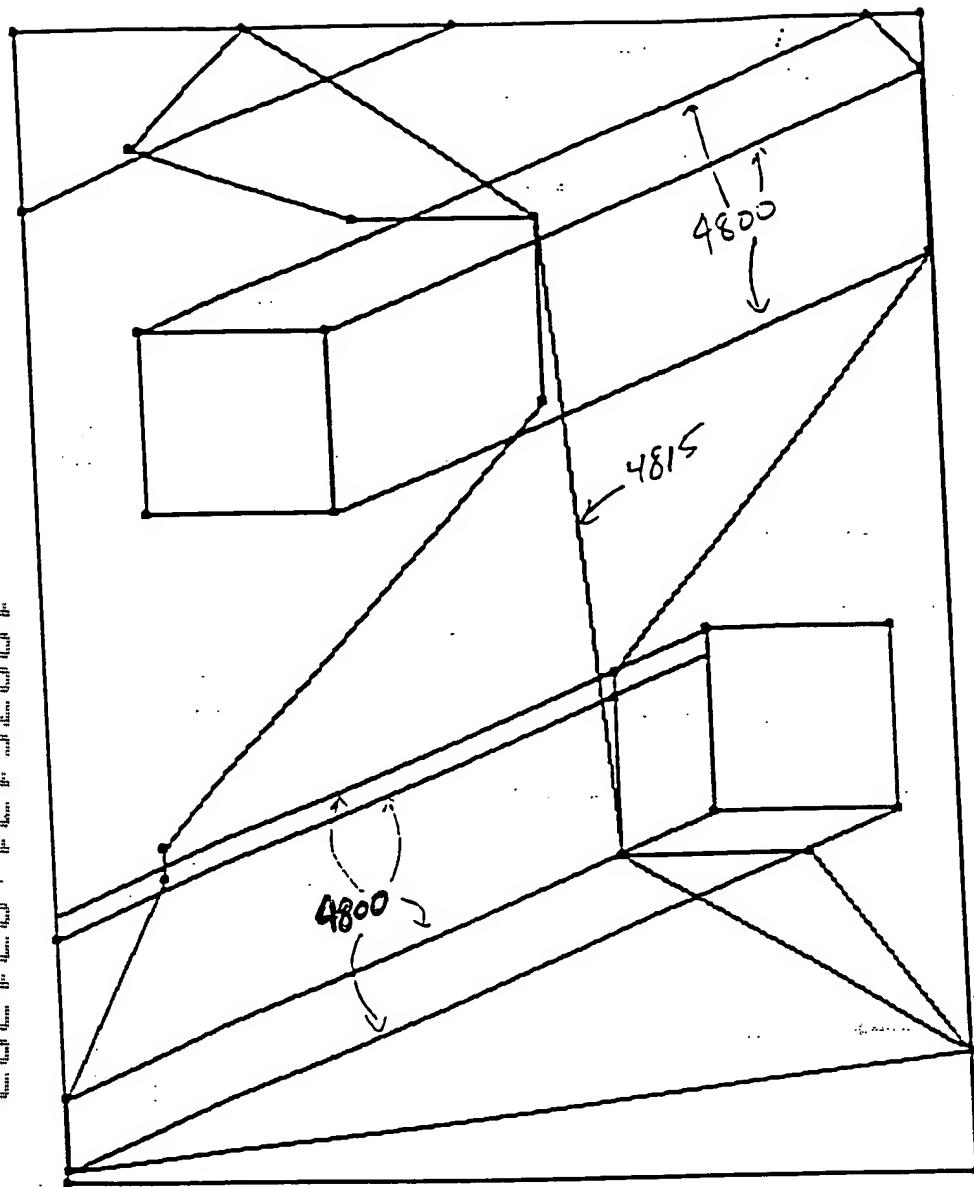
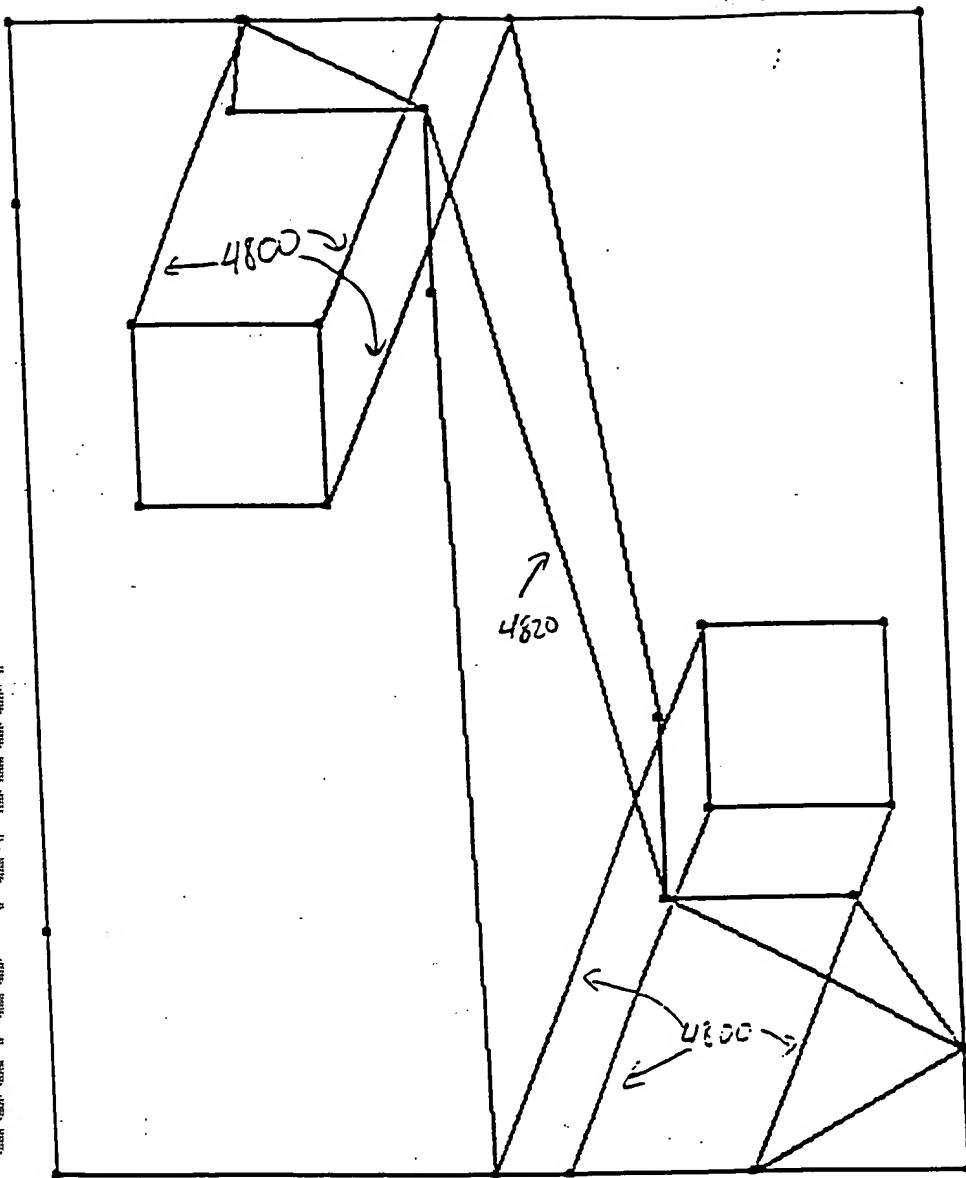


FIGURE 48A



## FIGURE 48B

2022-09-25 14:44:56

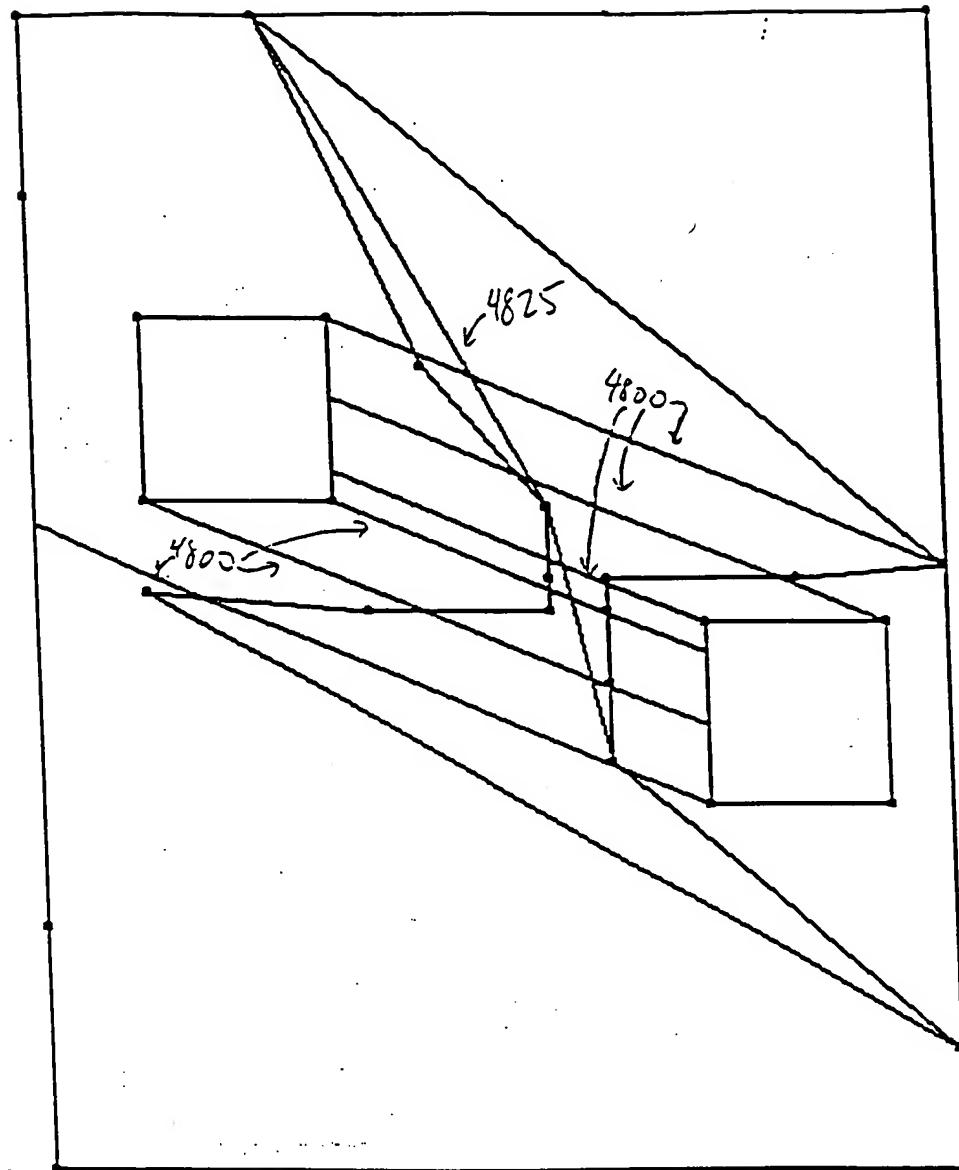


FIGURE 48C

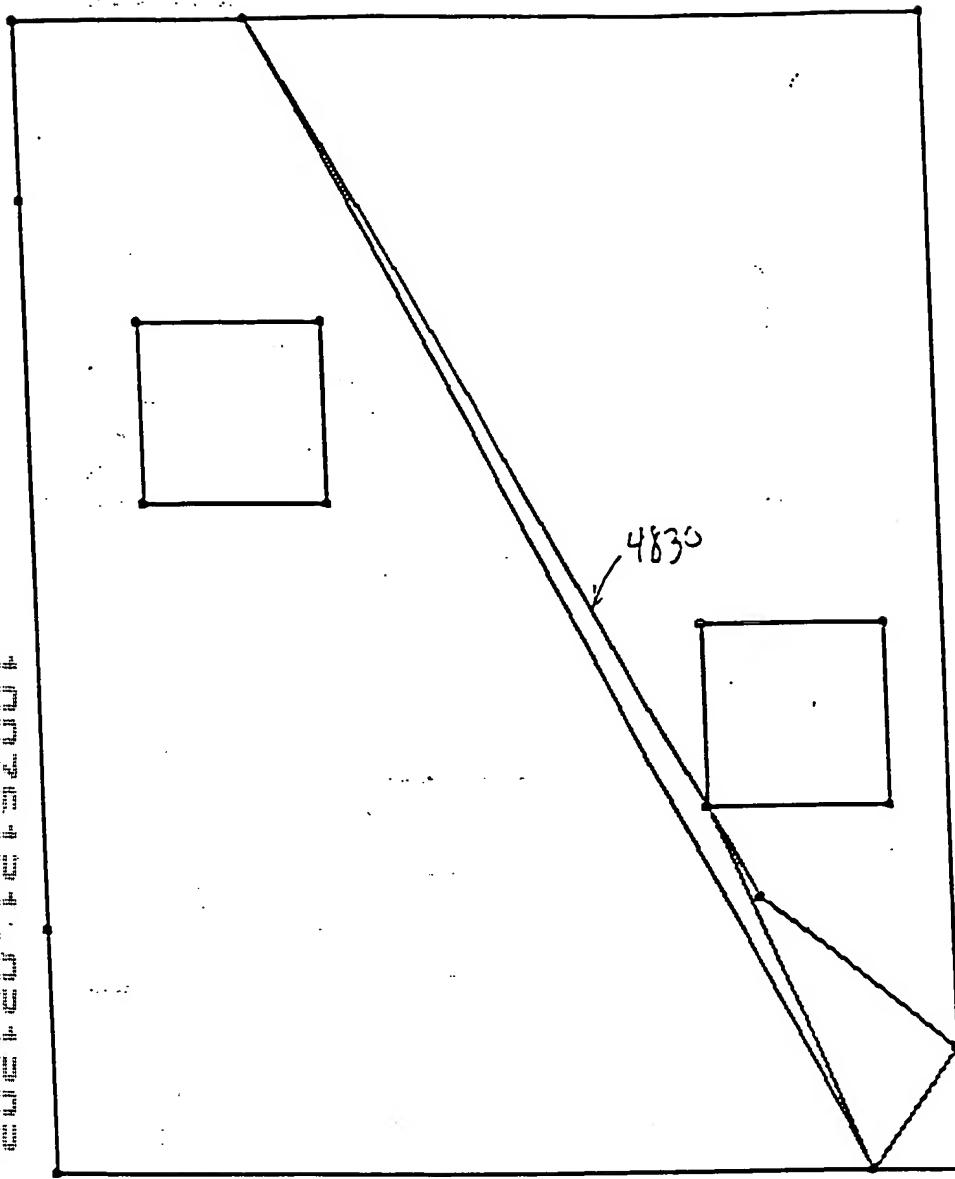
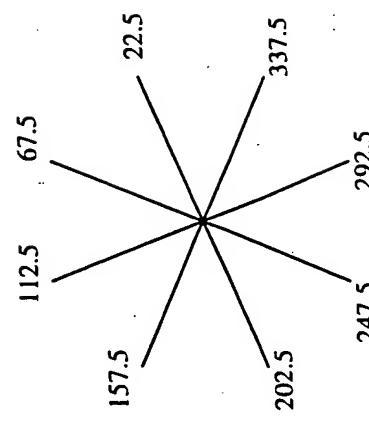
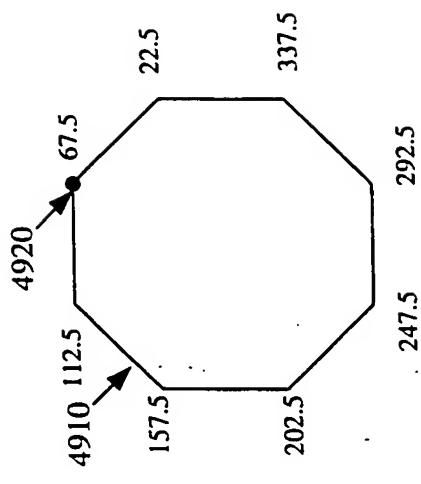
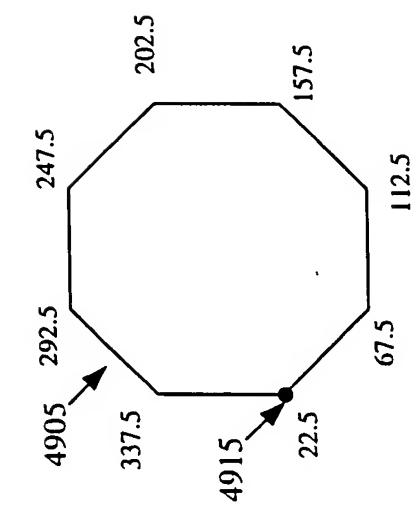


FIGURE 48 D



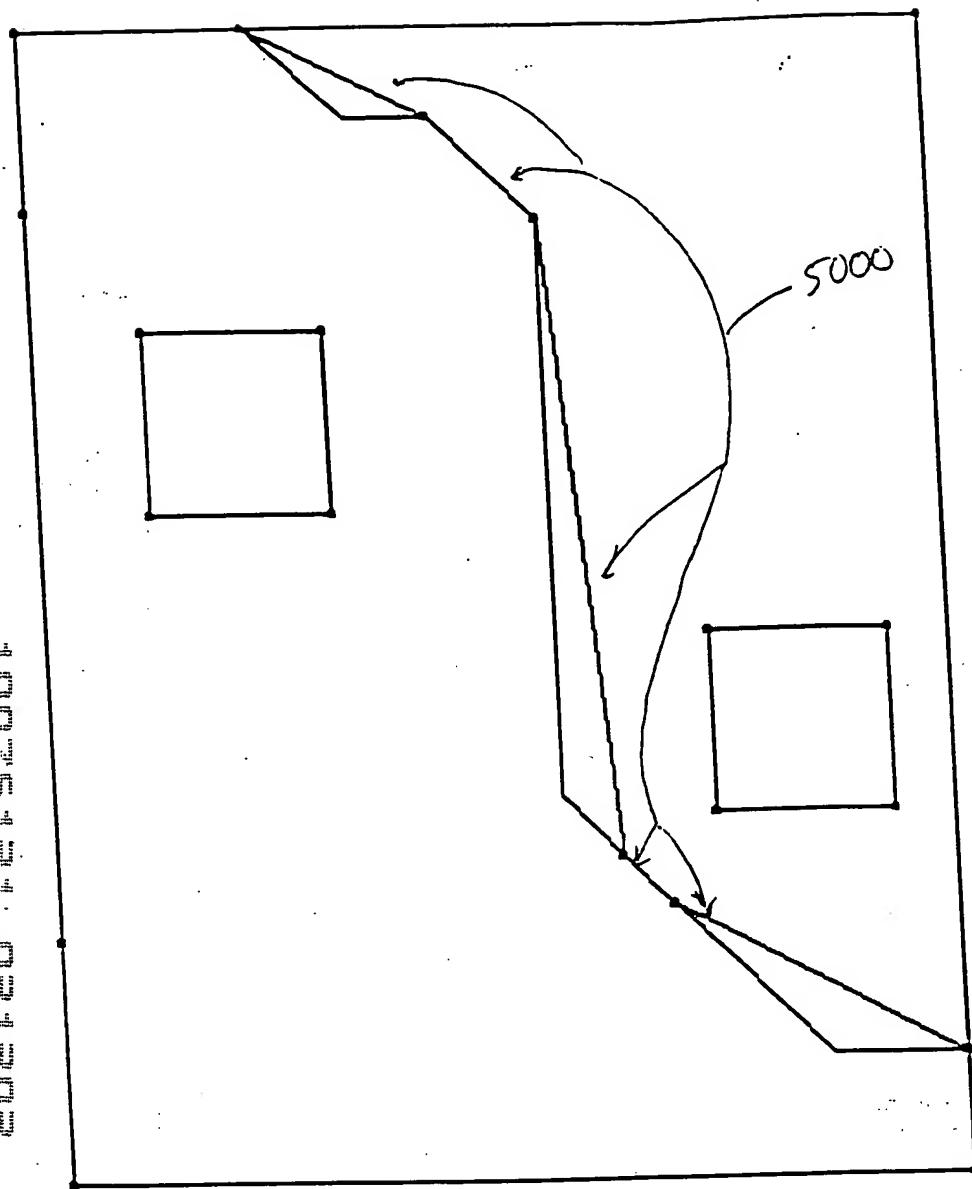
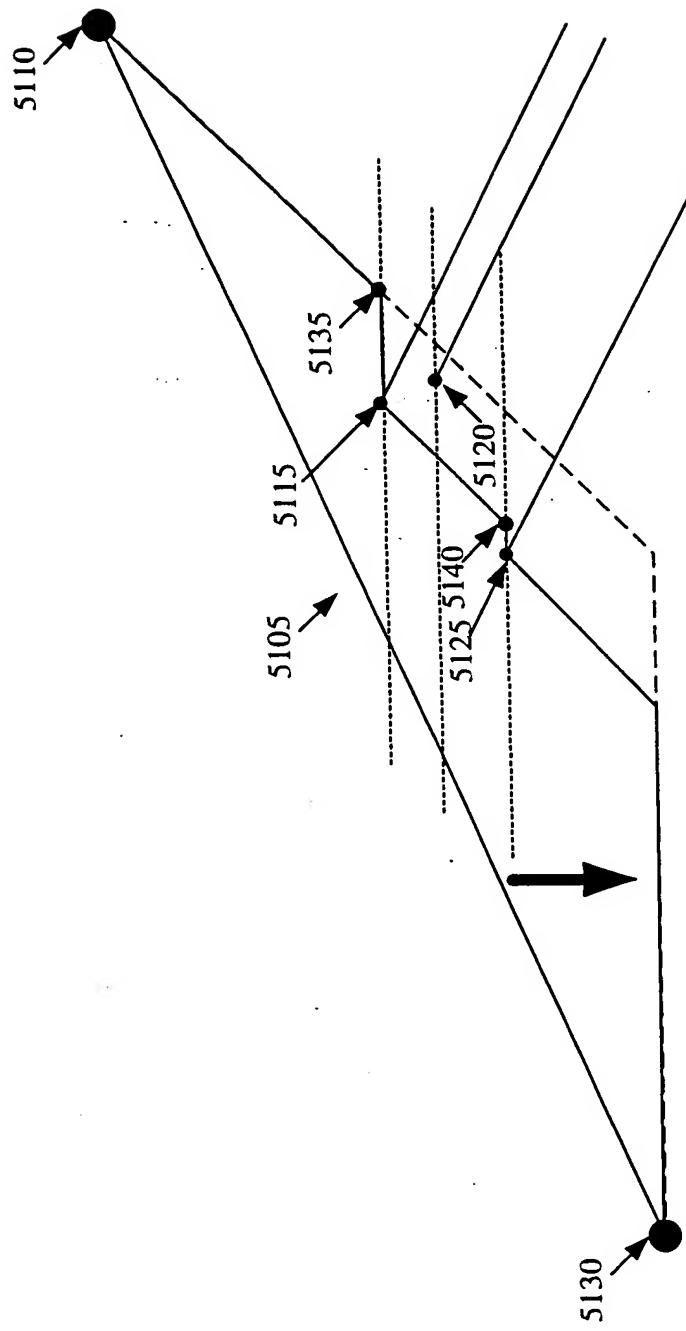


FIGURE 50

Figure 51



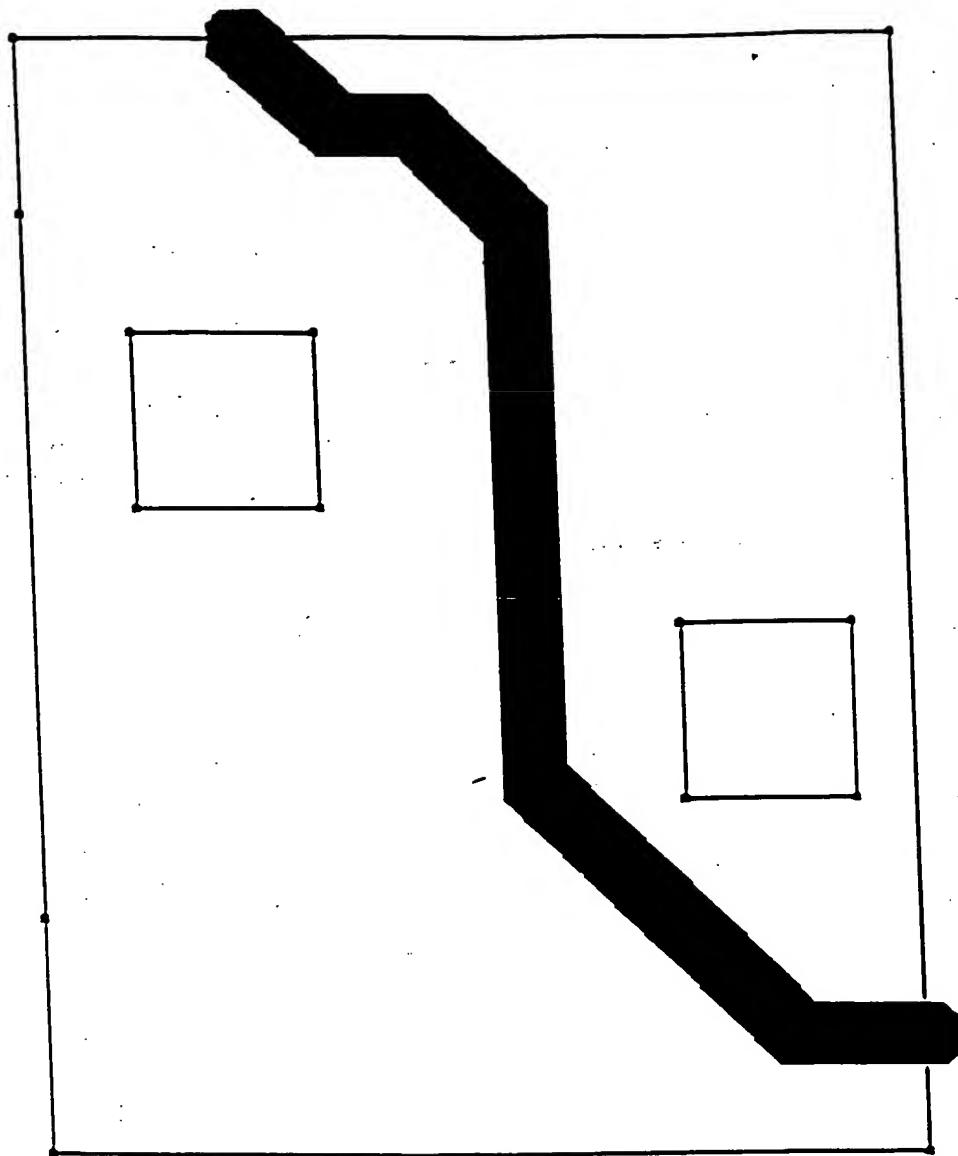
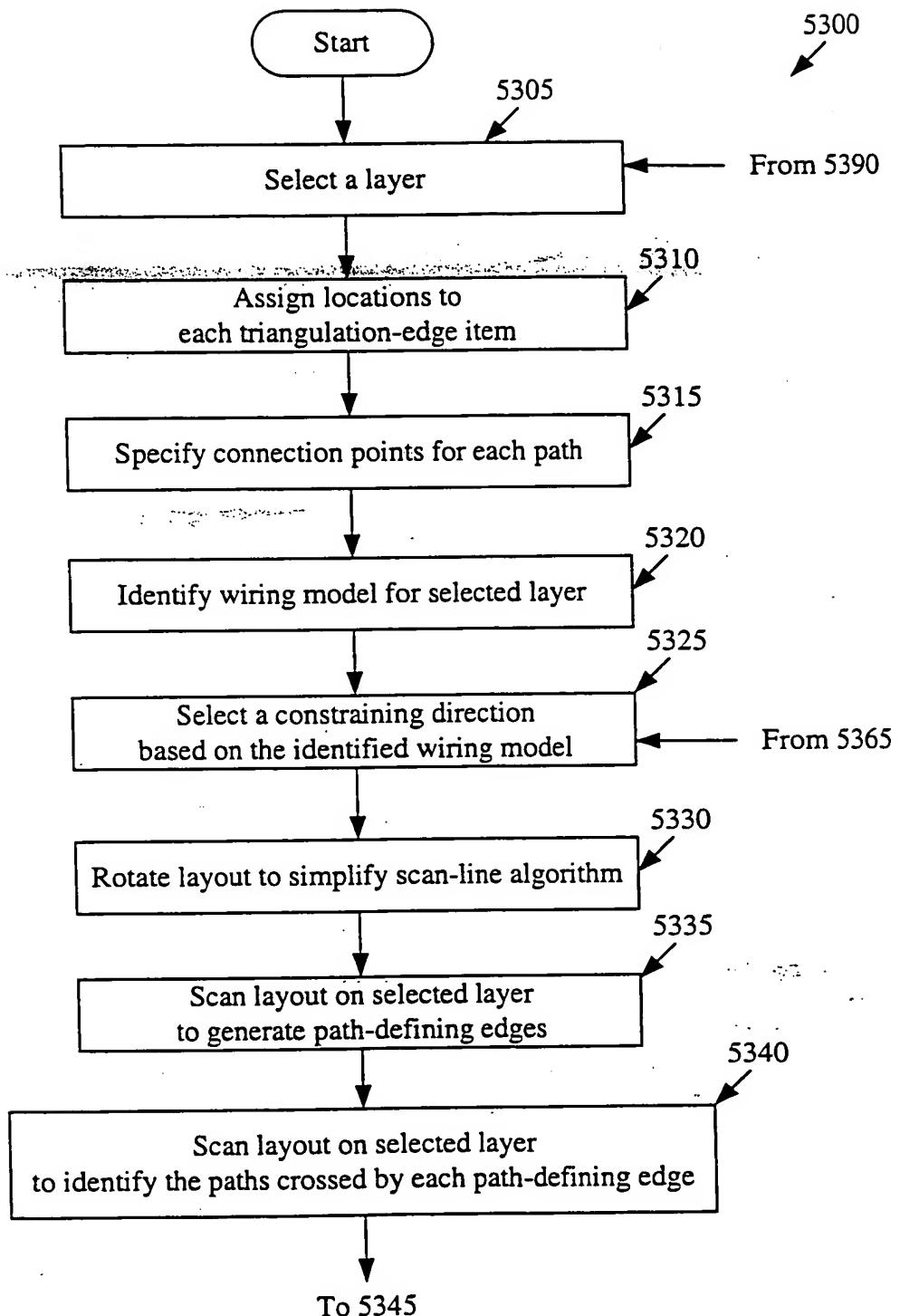
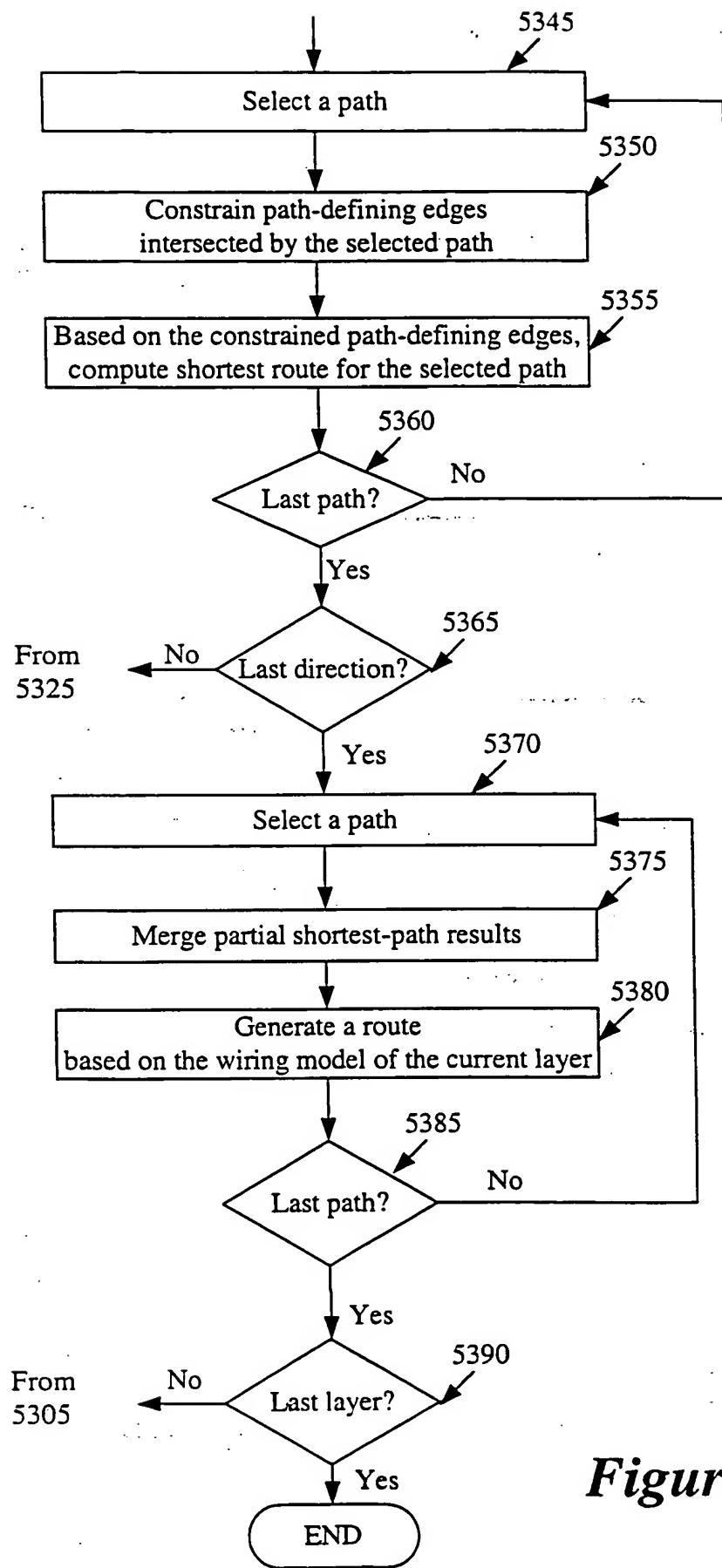


FIGURE 52



*Figure 53*  
*Figure 53: Figure 53A  
Figure 53B*



*Figure 53B*

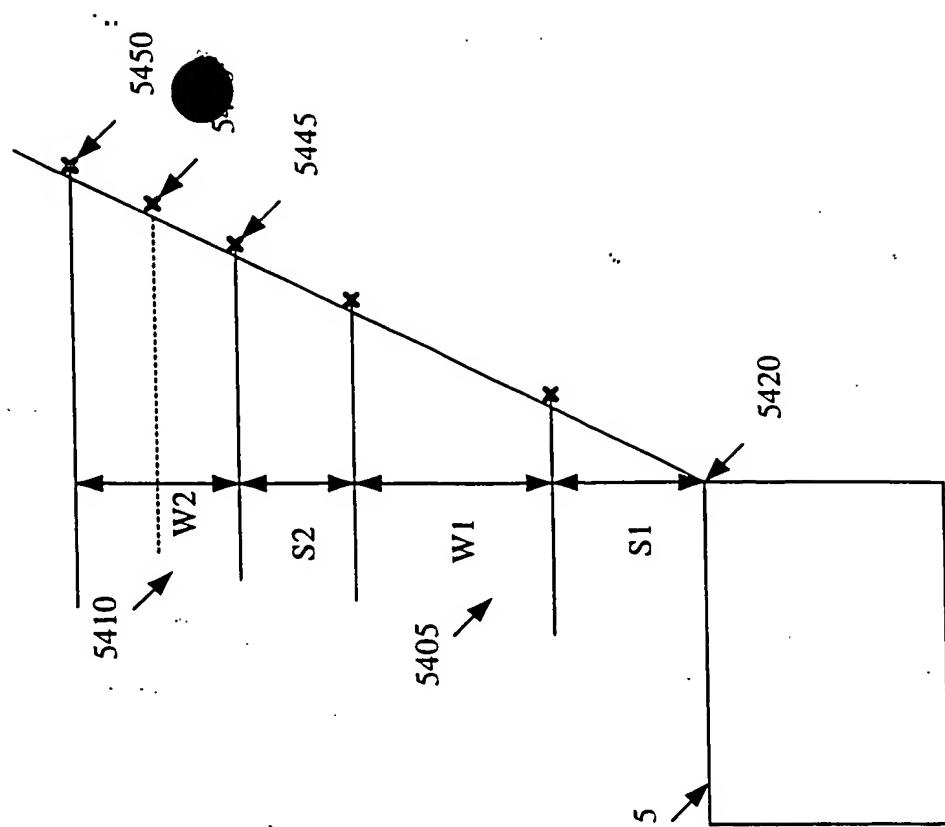


Figure 55

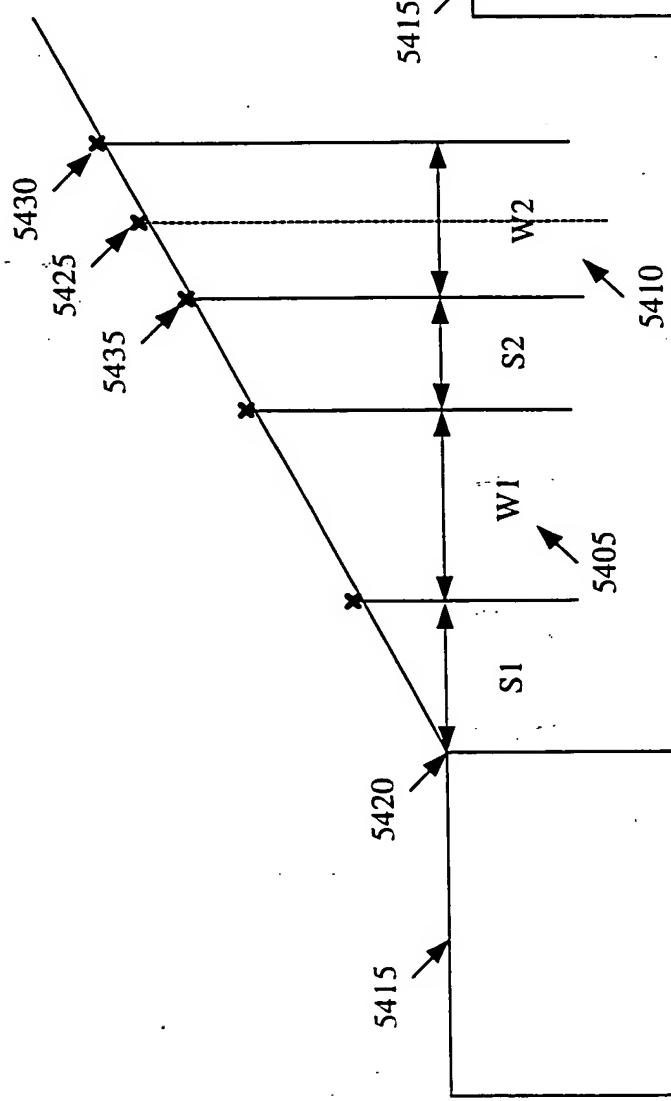


Figure 54

Figure 57

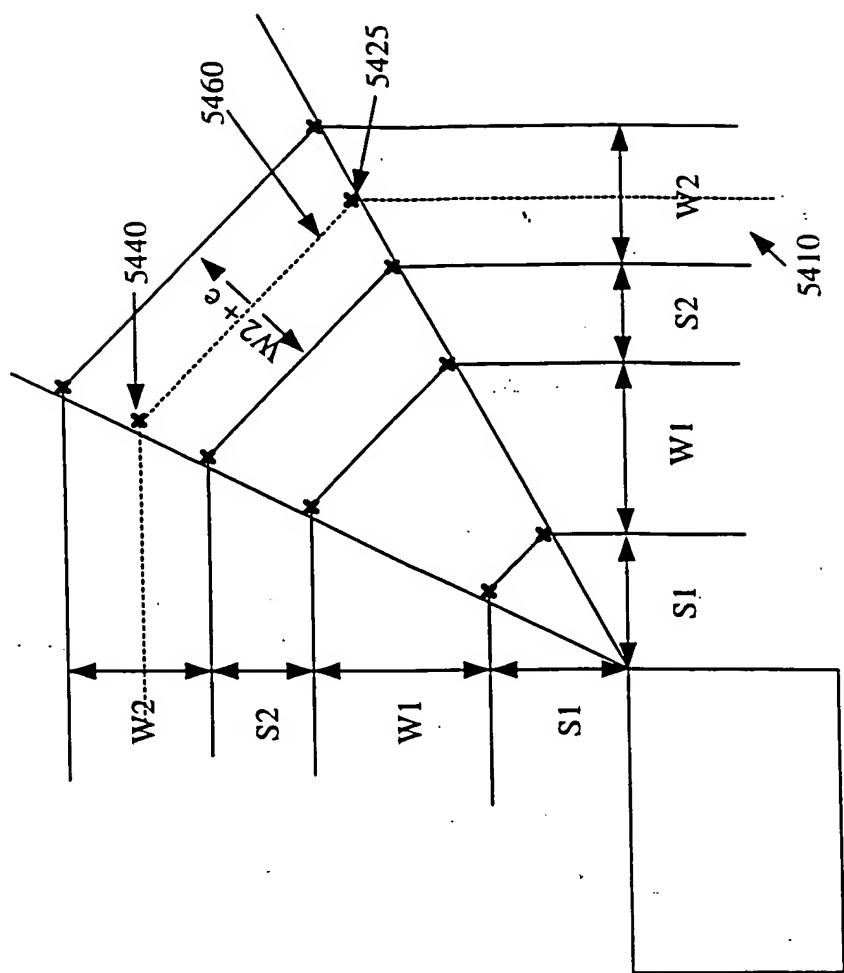
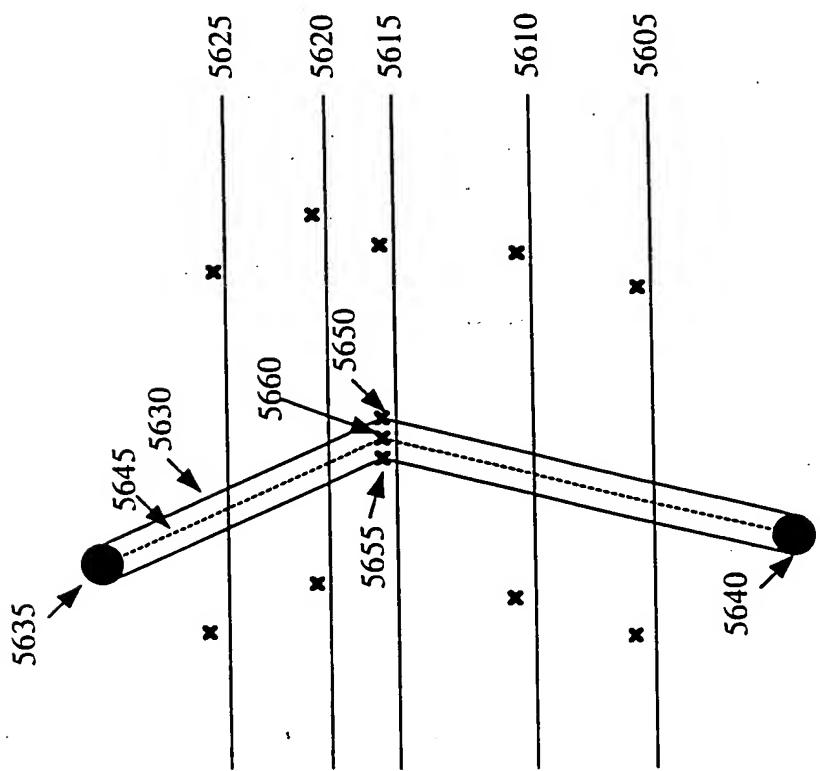


Figure 56



5810 5815 5905 5910

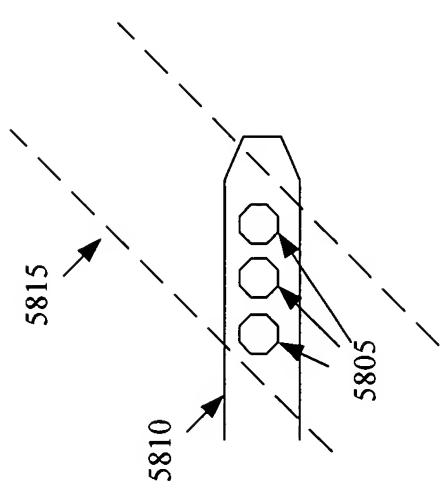


Figure 58

Figure 59

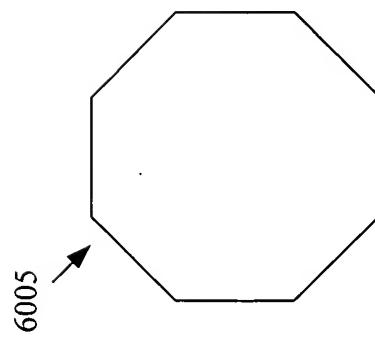
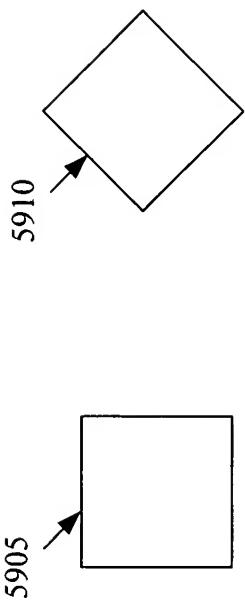


Figure 60

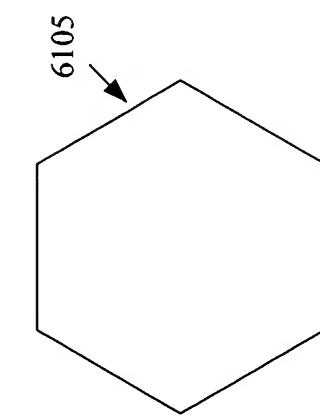


Figure 61

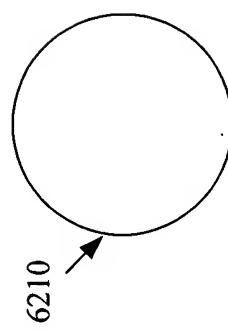


Figure 62

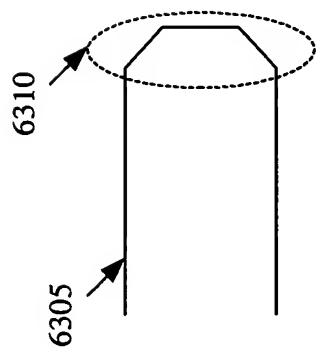


Figure 63

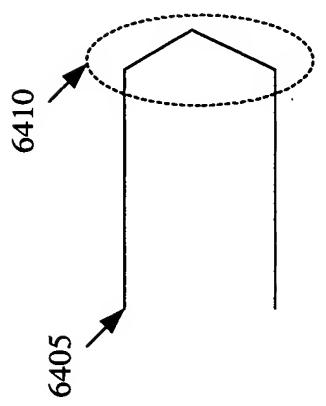


Figure 64

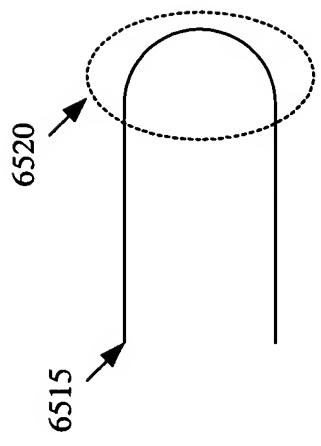
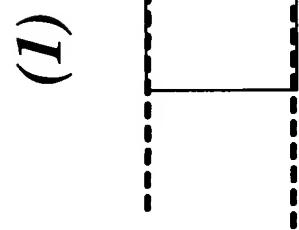
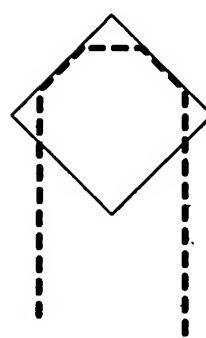


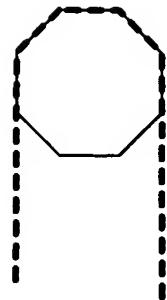
Figure 65



(1)



(2)



(3)

Figure 66

० २० ४० ६० ८० १०० १२० १४० १६० १८० २००



Figure 67

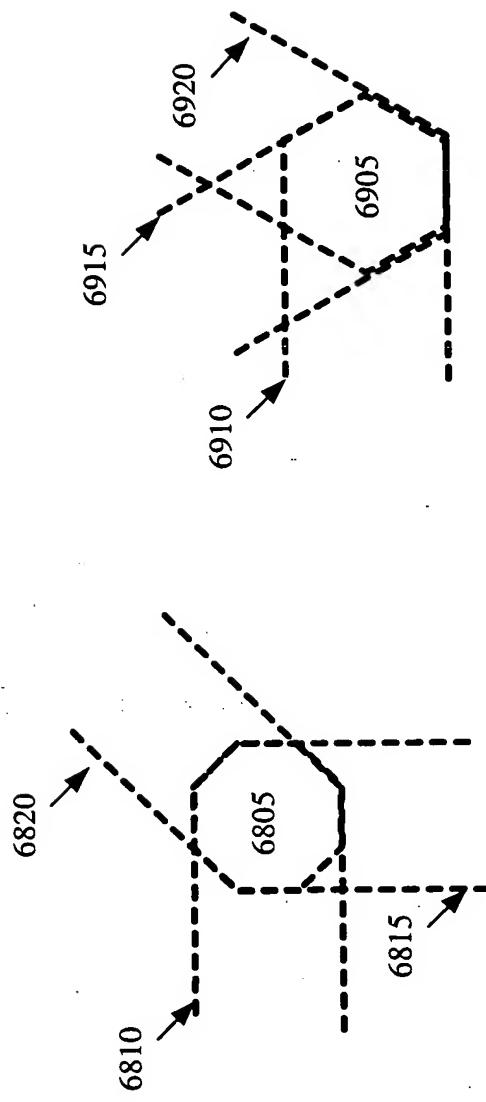


Figure 68

Figure 69

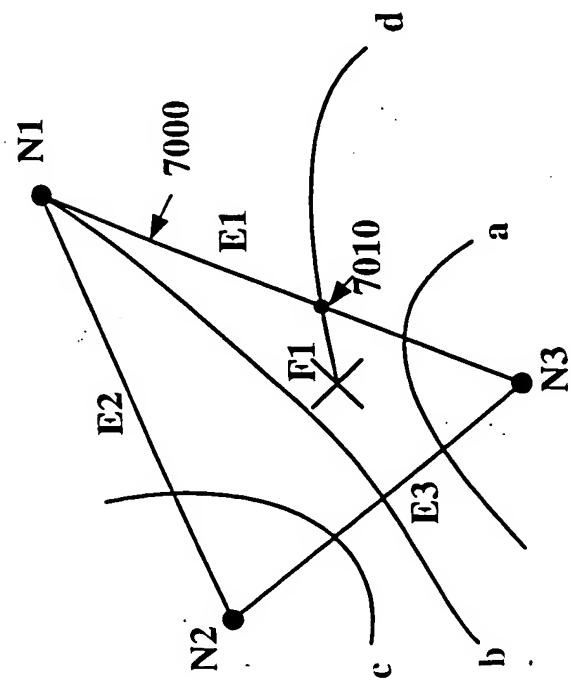


Figure 70

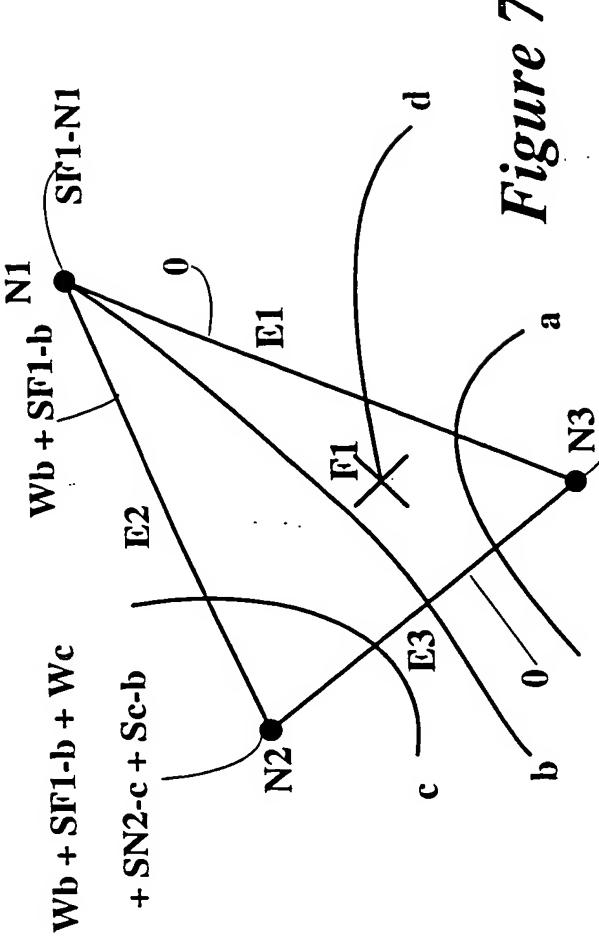


Figure 71

$W_a + SN3-a + SF1-a$

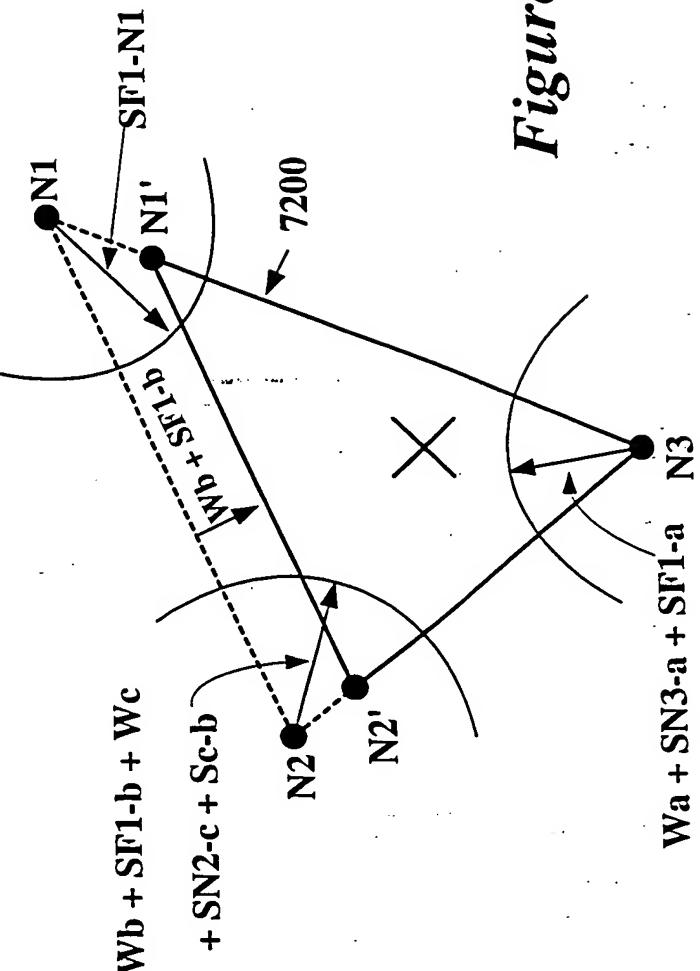


Figure 72

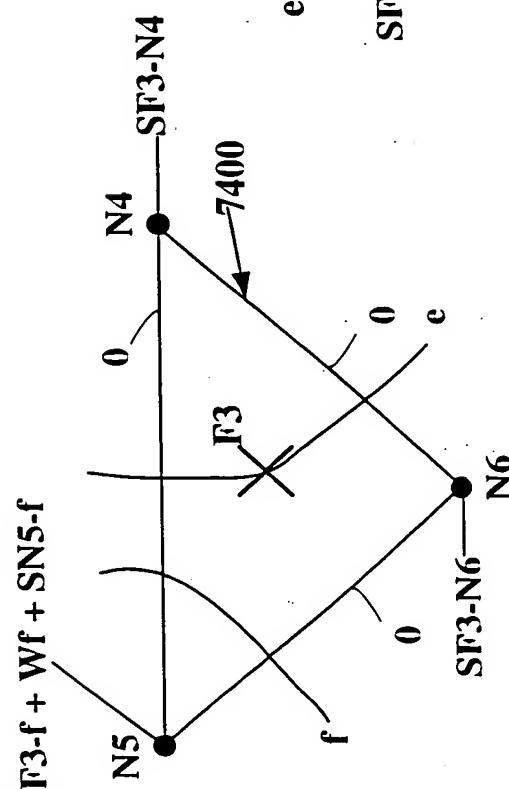
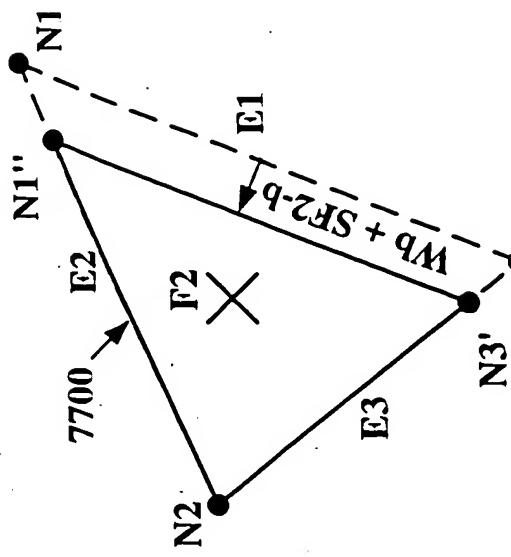
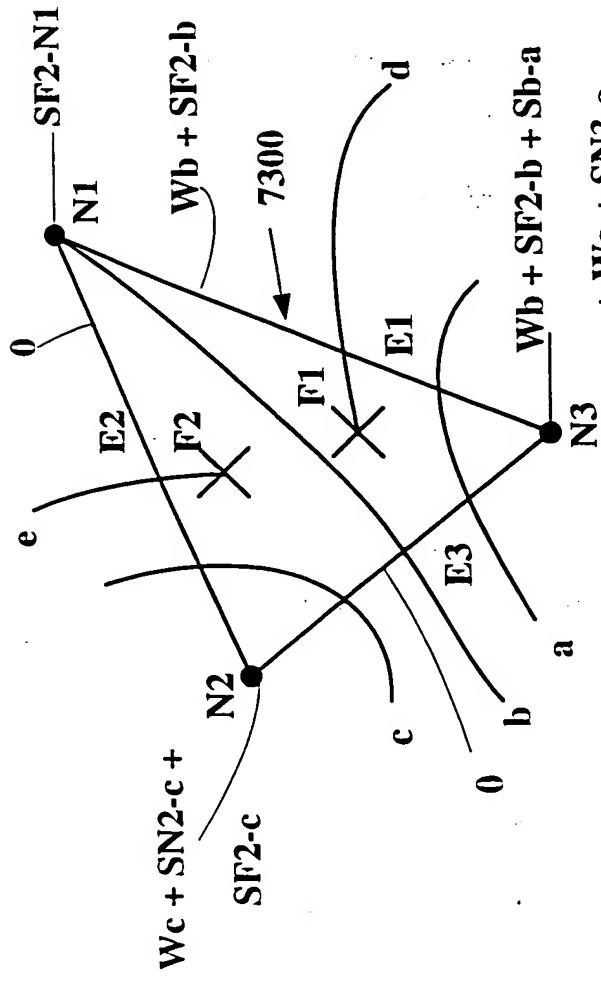


Figure 75



Figure 78

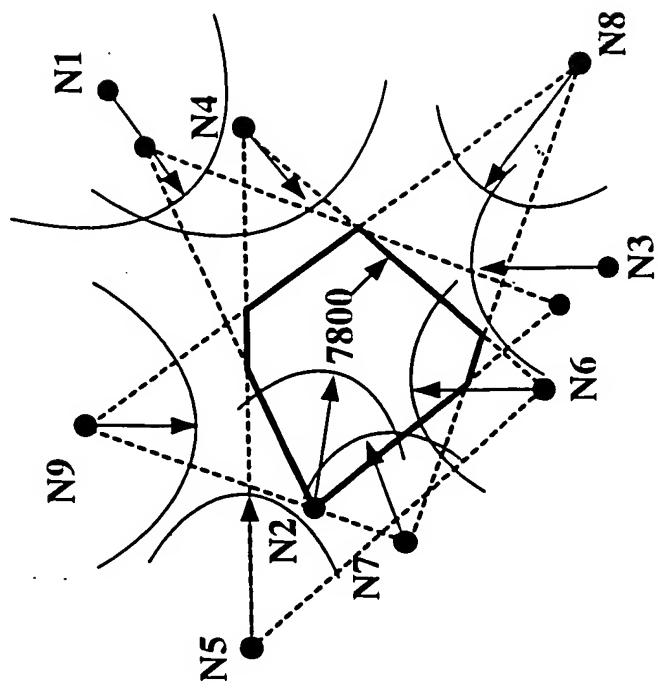


Figure 76

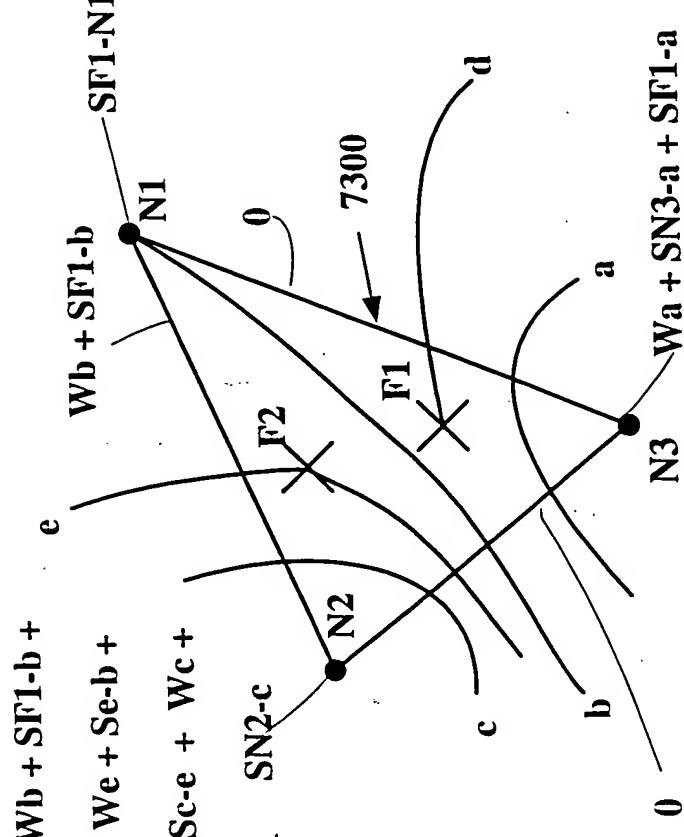


Figure 80

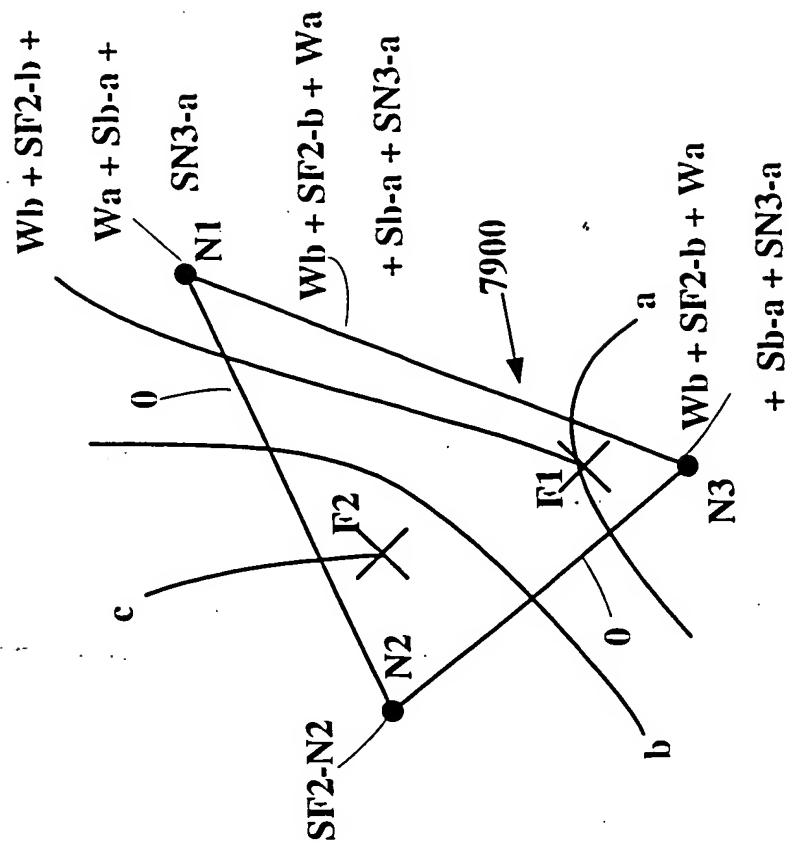
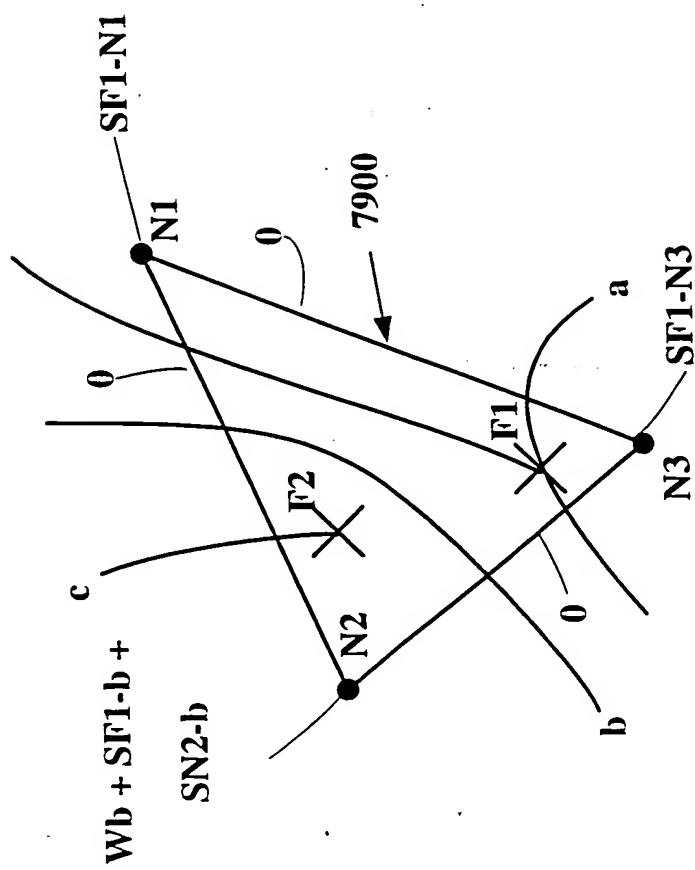


Figure 79



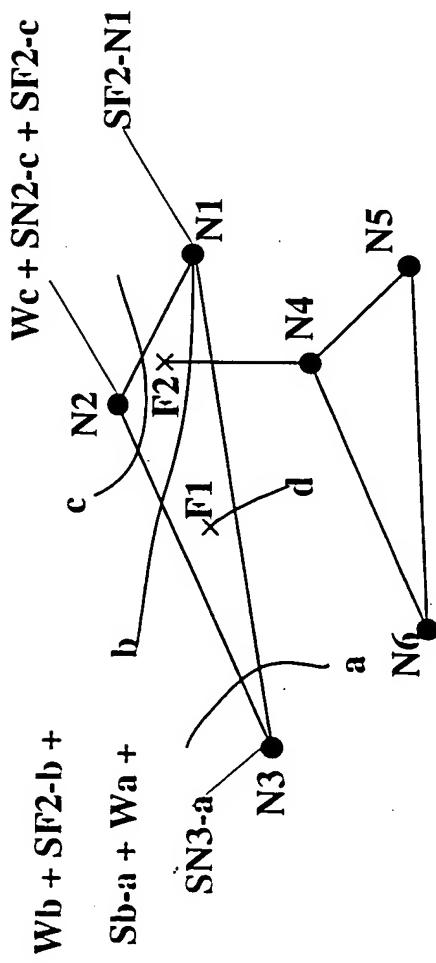


Figure 81

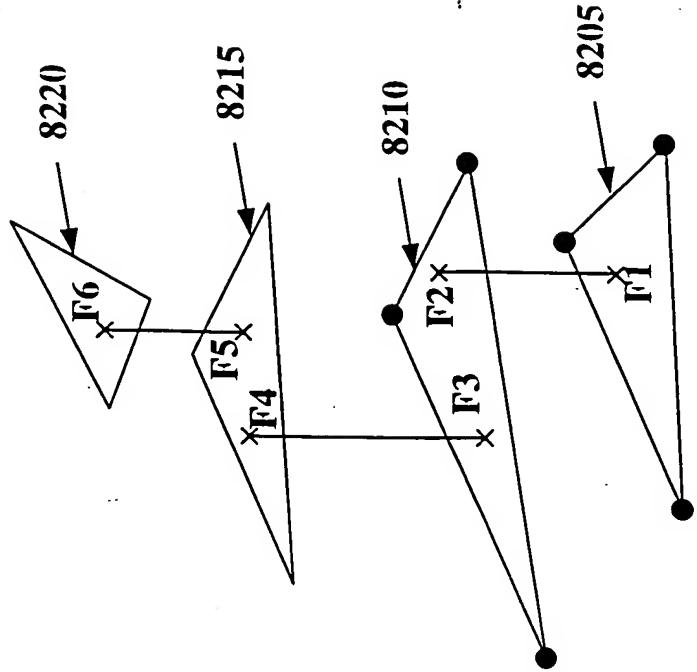


Figure 82

Figure 83

